

# HP Professional

THE MAGAZINE FOR HEWLETT-PACKARD ENTERPRISE COMPUTING ▴ VOL. 6 NO. 11

NOVEMBER 1992

## ENTERPRISE-WIDE INTEGRATION

**Downsizing Fever  
Drives Corporate IS  
To Client-Server LANs**

**THE WAIT IS OVER!**  
**HP Delivers PA-RISC  
For Real-Time  
Systems**

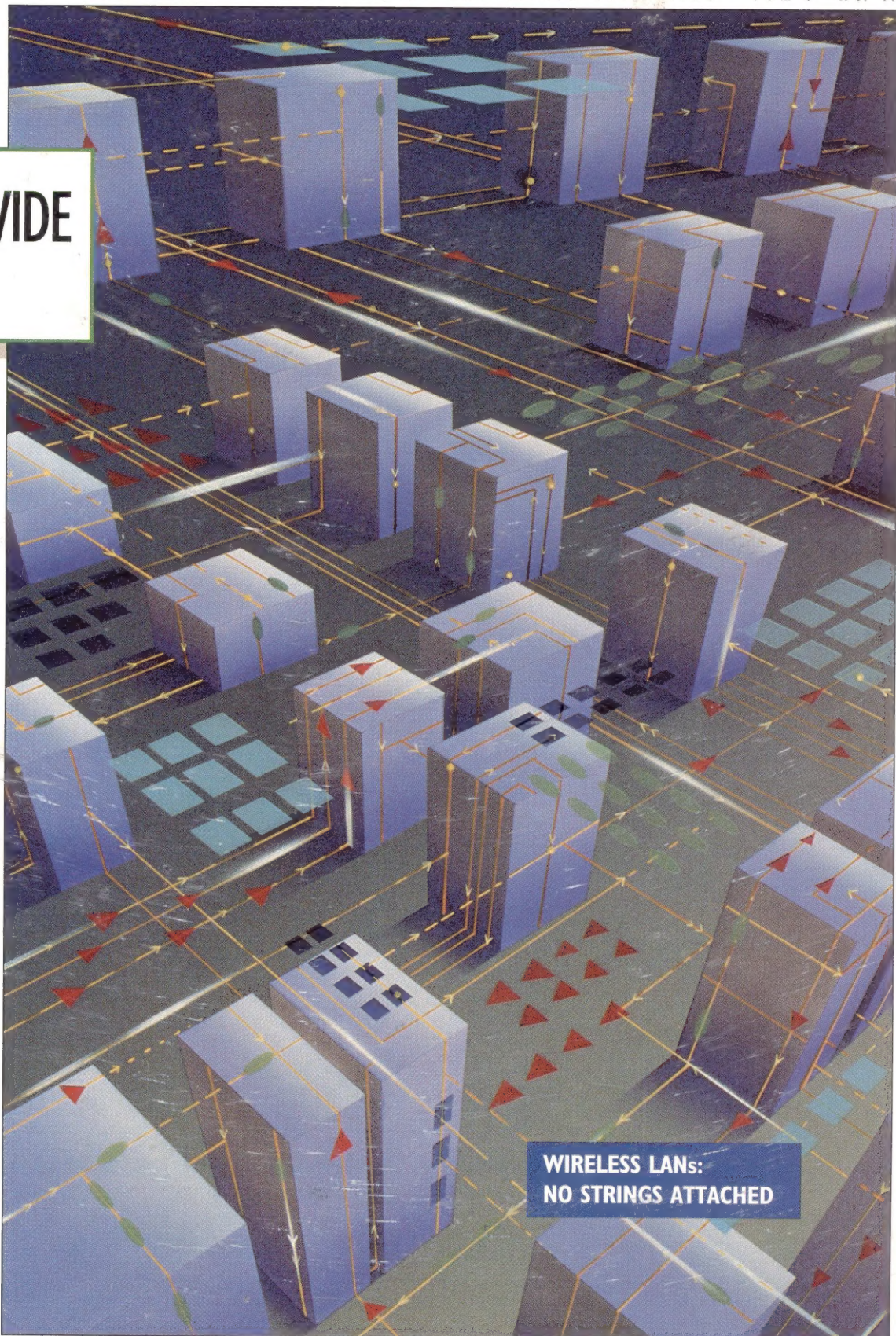
**BYE-BYE  
BUREAUCRACY**  
**Eliminate Red Tape  
With Financial EDI**

### **DP LABS:**

**Get The Point –  
And Click With  
PV-Wave**


**TeleUSE Helps You  
Avoid A GUI Mess**

**WIRELESS LANs:  
NO STRINGS ATTACHED**





# *This is your invitation...*



*Bradmark invites you  
to join the union of  
SUPERDEX and TurboIMAGE.*

*Now together to provide  
unprecedented  
indexing power and speed!*



**BRADMARK**  
Technologies, Inc.

SUPERDEX is a trademark product of Bradmark Technologies, Inc. for the SI-IMAGE package developed and implemented by Dr. Wolfgang Matt.

CIRCLE 184 ON READER CARD



POWER AND EASE OF USE ARE ISSUES  
TOO HAPPY TO DISCUSS  
DEVELOPMENT TOOL COMPANIES ARE ONLY



The sweeping claims made by some companies about their application development tools can conceal some glaring drawbacks. Like weak, ineffective languages that don't stand up to complex applications. And awkward user interfaces. That's why Cognos® combined the industrial strength of PowerHouse® 4GL with the easy-to-use, client/server technology of PowerHouse Windows™. So sweep away what- ever notions you may have about traditional application development soft- ware and call us.

**COGNOS**

OPEN TOOLS FOR A  
CHANGING WORLD.

1-800-4-COGNOS or 617-229-6600 ext. 81 (in Canada, 1-800-361-3163).

© 1992, Cognos, Incorporated. Cognos and PowerHouse are registered trademarks and PowerHouse Windows is a trademark of Cognos, Incorporated. Cognos supports all major commercial UNIX and midrange proprietary platforms.

CIRCLE 117 ON READER CARD



# Complete the picture

with



*IEM manufactures the largest line of third-party peripherals for Hewlett-Packard computers. Since 1979, we have been designing products specifically for HP 1000, 3000, and 9000 machines.*

*With solutions including tape backup products, optical disk drives, memory expansion products, and winchesters, IEM is the final piece for your computing puzzle.*

See us at INTEREX booth #145



IEM, Inc. • P.O. Box 1889  
Fort Collins, Colorado 80522 USA  
(303) 221-3005 • (800) 321-4671  
FAX: (303) 221-1909

IEM Europe • Colorado House  
Cromwell Park, Banbury Road  
Chipping Norton, Oxfordshire OX7 5SR  
(44) 0608 645000 • FAX: (44) 0608 645155

CIRCLE 122 ON READER CARD

©1992 Amis, Inc. F5.792



## 20 No Strings Attached

By Paula Jacobs

The ultimate in portable computing, wireless data networks signal new freedom for manufacturers. HP has made a significant commitment to wireless on several fronts including its integration of wireless communications into the 95LX palmtop PC.

## 26 Real Time Waits For No One

By Elaine Appleton

People putting new real-time systems in place want younger, peppier, cheaper, more standard systems. As the HP 1000 is enters its dotage, HP has answered users' prayers by introducing new PA-RISC-based industrial workstations and a board-level real-time system.

## 32 The Rage To Re-Engineer

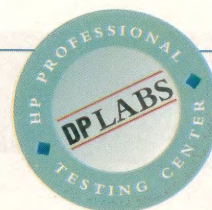
By David J. Rubinstein

Downsizing fever has swept corporate America — MIS now must steer the course to enterprise-wide client-server networks. The re-engineering challenge isn't simple, but the productivity rewards can be tremendous.

## 36 Bye, Bye Bureaucracy

By Dr. Trevor Richards

Financial EDI combines payments with paperwork to save your business time and money. Great benefits accrue to both the customer and supplier with the marriage of EDI and Electronic Funds Transfer.



### REVIEWS



#### Sophisticated GUIs

By David B. Miller

Telesoft's TeleUSE  
UIMS Lets You Build  
High-Class GUIs Faster  
And Easier ..... 42

#### Get The Point – And Click

By Tony Fiorito

Precision Visuals'  
PV-Wave Interactive Data  
Analysis Tool Discovers  
Hidden Trends And  
Patterns In Raw Data .... 46

### COLUMNS / DEPARTMENTS

#### Managing Your HP 3000: A Resurrection

By John P. Burke

The Stronger, More Open HP 3000 Rises To Battle  
Big Blue ..... 50

#### Networking: Terminal LAN

By Tim Cahoon

Emulation Software Lets Host Systems Talk The PC  
Network Talk ..... 54

#### Objectively Speaking: COBOL's Back In Town

By Richard Riehle

Look Out CASE Tools, C++ And Object-Oriented  
4GLs ..... 58

#### And Another Thing: What Users Really Want

By Gordon McLachlan

Give Users A Fighting Chance To Get The Most From  
Their Systems ..... 80

Editorial ..... 8

Industry Watch ..... 10

Advertiser Information ..... 65

New Products ..... 66

Product Showcase ..... 74

Career Opportunities ..... 76

Software Directory ..... 76

Advertiser Index ..... 79

### PRODUCT WATCH:

#### Advanced Planning

CARP Systems' Advanced  
Planning Software ..... 14

#### Out In The Open

DISC's OMNIDEX For  
Open Systems ..... 16

#### MANMAN Returns

ASK's MANMAN/X .... 18

Cover Illustration  
by E. Salen Krieger  
The Image Bank



HP9122C HP9153C Replacements

# ISA Floppy Disk Family



**ISA 1015**  
(HP9122C Compatible)  
3.5 inch dual  
HP-IB SS/80

**ISA 2025**  
(HP9153C Compatible)  
40MB with 3.5 inch single  
HP-IB CS/80 SS/80

**ISA 1060**  
5.25 inch single  
HP-IB SS/80

**ISA 1015S (NEW SCSI)**  
3.5 inch  
single  
(HP internal FD compatible)  
SCSI-for HP9000 300/400/  
700/800

**ISA 1060S (NEW SCSI)**  
5.25 inch single  
SCSI-for HP9000 300/400/  
700/800

• Memory Card • I/F Card • Floppy • Hard Disk • MO Disk • QIC Tape • DAT •

**ISA, the Largest HP Enhancements Manufacturer**

**HEAD OFFICE:** ISA CO., LTD. Japan. 1-1-5 Sekiguchi, Bunkyo-Ku, Tokyo 112 Japan  
Tel: 03-5261-1160 Fax: 03-5261-1165



<b>USA:</b>	Texas ISA, Inc:	Tel: 713-493-9925	Fax: 713-493-2724
<b>S.E. ASIA:</b>	ISAHK CO., LTD:	Tel: 330-1977	Fax: 330-1077
<b>EUROPE:</b>	EURISA SARL:	Tel: 1-48-61-48-95	Fax: 1-48-61-49-06

**CIRCLE 245 ON READER CARD**

**UNIX** is a registered trademark of AT&T in the U.S.A. and in other countries.

**MS-DOS** is a trademark of Microsoft.

**Macintosh** is a trademark of Apple Computer Inc.

**X Window System** is a trademark of MIT.

**Microsoft** is a registered trademark of Microsoft Corp.

**NewWave** is a trademark of Hewlett-Packard Co.

# HP Professional

**EDITOR-IN-CHIEF** Donald R. Marks  
**ASSOCIATE EDITOR** Andrea J. Zavod  
**TECHNICAL EDITOR** Bill Sharp  
**CONTRIBUTING EDITOR** Gordon McLachlan  
**APOLLO EDITOR** Fred Mallett  
**FIELD SERVICE EDITOR** Ron Levine  
**HP 3000 EDITOR** John P. Burke  
**INTERNATIONAL EDITOR** Marsha Johnston  
**NETWORKING EDITOR** Tim Cahoon  
**PC/UNIX EDITOR** Miles B. Kehoe  
**SOFTWARE ENGINEERING EDITOR** Richard Riehle  
**EDITORIAL ASSISTANT** Stephen G. McDowell  
**CONTRIBUTORS** Elaine Appleton, Paula Jacobs,  
Trevor Richards, David J. Rubinstein

## DP LABORATORY AND TESTING CENTER

**MANAGER** David B. Miller  
**ASSISTANT LAB MANAGER** Anne Schrauger  
**TECHNICAL EDITORS** Marty Levine, Charlie Simpson  
**REVIEW EDITORS** John P. Burke, Tony Fiorito,  
Miles B. Kehoe, Michele Petrovsky, Barry Sobel

## DESIGN & PRODUCTION

**ART DIRECTOR** Al Feuerstein  
**PRODUCTION MANAGER** Jean Lait  
**DESIGN/PRODUCTION ASSISTANT** Jack Rotoli  
**PRODUCTION COORDINATOR** Teri Campbell

## CIRCULATION

**FULFILLMENT MANAGER** Marjorie Pitrone  
**CIRCULATION AUDIT MANAGER** Rebecca Schaeffer  
**DATABASE MANAGER** Phyllis Chandler

## MARKETING

**PROMOTIONS ART DIRECTOR** Timothy M. Kraft  
**PROMOTIONS WRITERS** Craig T. Kelly, Ronald Sklar  
**GRAPHIC DESIGNERS** Mike Cousart, Thomas Owen

**PUBLISHER** Leslie Ringe

## CARDINAL BUSINESS MEDIA, INC.

**PRESIDENT AND CHIEF EXECUTIVE OFFICER:**  
Robert N. Boucher

**CHIEF FINANCIAL OFFICER** Thomas C. Breslin  
**EXECUTIVE DESIGN DIRECTOR** Leslie A. Caruso  
**CIRCULATION DIRECTOR** Carrie Eisenhandler  
**HUMAN RESOURCE MANAGER** Mary Steigenwalt  
**EXECUTIVE CONSULTANT** Carl B. Marbach

For more information on how to contact your sales representative, see page 79. For subscription information and address changes, call (215) 957-4269. Editorial, advertising sales and executive offices at 101 Witmer Rd., Horsham, PA 19044 ■ (215) 957-1500 Corporate FAX (215) 957-1050. To reach staff listed on masthead via UUNET, send MAIL to: LAST NAME@procast.propress.com

HP PROFESSIONAL ISSN 0896-145X is published monthly by Cardinal Business Media Inc., 101 Witmer Rd., Horsham, PA 19044. Subscriptions are complimentary for qualified U.S. and Canadian sites. Single copy price, including postage \$4. One year subscription rate: \$30 U.S. and Canada; \$60 foreign. All orders must be prepaid. For reprints, contact Reprint Management Services, 505 E. Airport Rd., Lancaster, PA 17601; (717) 560-2001, Fax (717) 560-2023. Second Class postage paid at Horsham, PA 19044, and additional mailing offices. POSTMASTER: Send all correspondence and address changes to HP PROFESSIONAL, P.O. 616, 101 Witmer Rd., Horsham, PA 19044. COPYRIGHT © 1992 by Cardinal Business Media, Inc. All rights reserved. No part of this publication may be reproduced in any form without written permission from the publisher. All submitted manuscripts, photographs and/or artwork are sent to Cardinal Business Media, Inc. at the sole risk of the sender. Neither Cardinal Business Media, Inc. nor HP PROFESSIONAL magazine is responsible for any loss or damage. HP PROFESSIONAL is an independent journal not affiliated with Hewlett-Packard Company. HP and Hewlett-Packard are registered trademarks and HP PROFESSIONAL is a trademark of Hewlett-Packard Company.

**BPA**



# 60-day free trial.



## HP GlancePlus. Your watchdog for performance problems.

Without performance tools, even the best managed systems are subject to overload. That's why we're offering HP GlancePlus free for 60 days. So you can see for yourself how easily you can solve problems or avoid them altogether.

HP GlancePlus diagnostic software is one of Hewlett-Packard's family of performance products and services. In its role as watchdog on your HP MPE or HP-UX system, it gives you early warnings of problems.

You see in graphic detail exactly

where work loads are building up to the point where your whole system will start slowing down.

Call us now at 1-800-237-3990 to see if you qualify for a free trial.\* In Europe, fax your mailing address to +33 76 62 16 67. And let HP GlancePlus watch over things.



© 1992 Hewlett-Packard Company  
\*Limited time offer based on product availability.

**CIRCLE 199 ON READER CARD**



# Welcome to

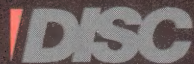
*"Users don't care whether data resides in old hierarchical databases, VSAM files or new relational databases or whether it's scattered among mainframes, mini-computers, personal computers or local-area networks. They just want transparent, real-time, on-line access...Now."*

*Alan Radding, Computerworld Magazine*

## **OMNIDEX for Open Systems.**

Instant, on-line access to data.  
From any application or database.

CIRCLE 113 ON READER CARD



Business Solutions for the 90's  
(303) 444-4000



# the Open Road





# No More Status Quo



By Don Marks



kinds are striving to "flatten" their organizations into lean, tightly focused — yet still flexible — fighting machines.

The conventional wisdom about downsizing is that by simultaneously streamlining work practices and moving decision-making power closer to where a company's work gets done, more cost-effective organizations will result. With the help of distributed computing and instantaneous communications, so the theory goes, fewer people will accomplish more work in less time. If the strategy succeeds, corporate shareholders will reap its fruits in the form of improved returns on investment and stabilized profit margins in an increasingly competitive global market place.

Nowhere has the rush to re-engineer had greater impact than in corporate MIS organizations. In the quest for a decentralized information infrastructure, PC LANs, workstations, X terminals and UNIX servers have superseded centralized mainframe and minicomputer architectures long maintained by MIS. RISC technology, miniaturization and the ruthlessly competitive PC clone market all have spurred the growth of low-cost distributed information systems. Existing data center systems now play host to but a few I/O intensive applications.

Such is the situation that confronts many, if not most, MIS organizations today. And the pressure to cut costs escalates with each successive recessionary quarter. Indeed, many organizations have gone so far as to scale back their workforce first, and then attempt to implement the technology needed to make remaining workers more productive. In these and other beancounter-driven scenarios, direction, know-how and simplified corporate solutions are sorely lacking.

Into this void steps a new HP organization: the Cooperative Computing Systems Division (CCSY). Its charter: to pull together standards-based HP hardware, enabling middle-ware technologies (such as HP OpenMail and Information Builders Inc.'s Enterprise Data Access/SQL) and a bundle of third-party

applications and services in order to deliver — in neat, easy-to-itemize packages — a complete information infrastructure for a global enterprise.

Targeted at HP's largest customers — Fortune 200-class named accounts — these cooperative computing solutions encompass most of the major legacy platforms you would expect to encounter in the multiple data center information network of a typical international corporation. Systems integration assistance from CSC Partners and SAIC, along with HP's own expanded Professional Services Organization, ensures that customers' existing systems, be they IBM mainframes, AS/400s or DEC VAX/VMS machines, interoperate as transparently as possible with the HP-UX servers supplying the real horsepower for these new enterprise-wide applications.

## A New Foundation?

What CCSY offers is nothing short of a new foundation for information systems — the fundamental building blocks of the ubiquitous "information utility" that HP's new CEO Lew Platt has been predicting for the last few years. And you can buy it today — or, perhaps more accurately, you can hire HP to custom build it for you.

The question that remains unresolved, of course, is what happens to the knowledge workers displaced by the information technology they themselves help to create and implement?

Perhaps retraining people for high-tech computing jobs, as both Bill Clinton and George Bush suggested during this year's presidential campaign, is no longer the desirable alternative for our society that it once was. Retraining, yes, by all means, but to what end? In all likelihood, future employment opportunities will be found in IT-enabled versions of long-standing professions, such as health care, accounting, law and banking. Tomorrow's knowledge worker needn't be a programming wizard or database guru: Suddenly, the ability to solve basic business problems has become much more apropos.

While changes in our society as a whole may take place in fits and starts, in the information technology industry the cry for change is frequently sounded and almost always heard. In fact, as HP once again has demonstrated, in computing, there can be no such thing as a status quo.

A handwritten signature in cursive script that reads "Don Marks".



**TURBO-33**  
**HP Series 9000**  
**Accelerator**



# SERIOUS ACCELERATION

## **33 Mhz speed for serious applications.**

The TURBO-33 is a 33 Mhz accelerator card for Hewlett Packard Series 9000 computers. The card is compatible with the HP 216, 217, 220, 226, 236, 237, 310 and 320 workstations.

Programs run from 6 to over 100 times faster.

## **Compatible with Basic and Pascal.**

The TURBO-33 is designed for the BASIC and PASCAL systems. No modifications are required for user programs.

## **Innovation from Newport Digital.**

TURBO cards are also available at 25 Mhz and 16 Mhz. All the TURBO cards have a five year warranty.

Call Newport Digital for information on these and other innovative products.

### **TURBO-33 DELIVERS PERFORMANCE!**

<b>Computation Type</b>	<b>Speed Increase</b>
Integer Arithmetic	6 to 8
Real Arithmetic	9 to 50
Real Transcendental	32 to 293

## **NEWPORT DIGITAL**

14731 Franklin Avenue, Suite A  
Tustin, California 92680  
714-730-3644

TURBO 33, TURBO 25 and TURBO 16 are trademarks of Newport Digital Corporation

**CIRCLE 246 ON READER CARD**





## INDUSTRY WATCH

### Bill Sharp

years in this business, but NewWave Computing is gone. Just when I thought I might someday understand it, too! It makes me feel really frustrated — kind of like a dog that finally got its chewing bone all slippery-slobbery and situated right in the middle of the living-room rug, and *snatch*, they take it away.

Rather than struggle to get my NewWave Computing strategy bone to my liking, I now can gnaw away on Distributed Object Computing (DOC). This is HP's new wraparound marketing theme intended to encapsulate and promote object-oriented HP technology.

Saul Marcus, product line manager for the HP DOC program, explains that HP's goal is to link all of its object-oriented technologies and base them on emerging standards in order to:

- Make interaction of people, applications and systems over a network as easy as interactions within a single system.
- Make the creation and maintenance of networked applications and services easy for developers.
- Allow easy interoperability among users next-door and worldwide.
- Allow networks to scale to tens of thousands of users.

HP products targeted for integration into this DOC environment include:

- HP NewWave (the desktop manager).
- HP Visual User Environment (HP-VUE).
- HP OpenView network management system.
- HP OpenODB object-oriented database management system.
- HP C++/SoftBench computer-aided software engineering tools.

## Goodbye To NewWave, Hello To Distributed Object Computing

# Something To Chew On

Maybe no strategy can last more than three or four

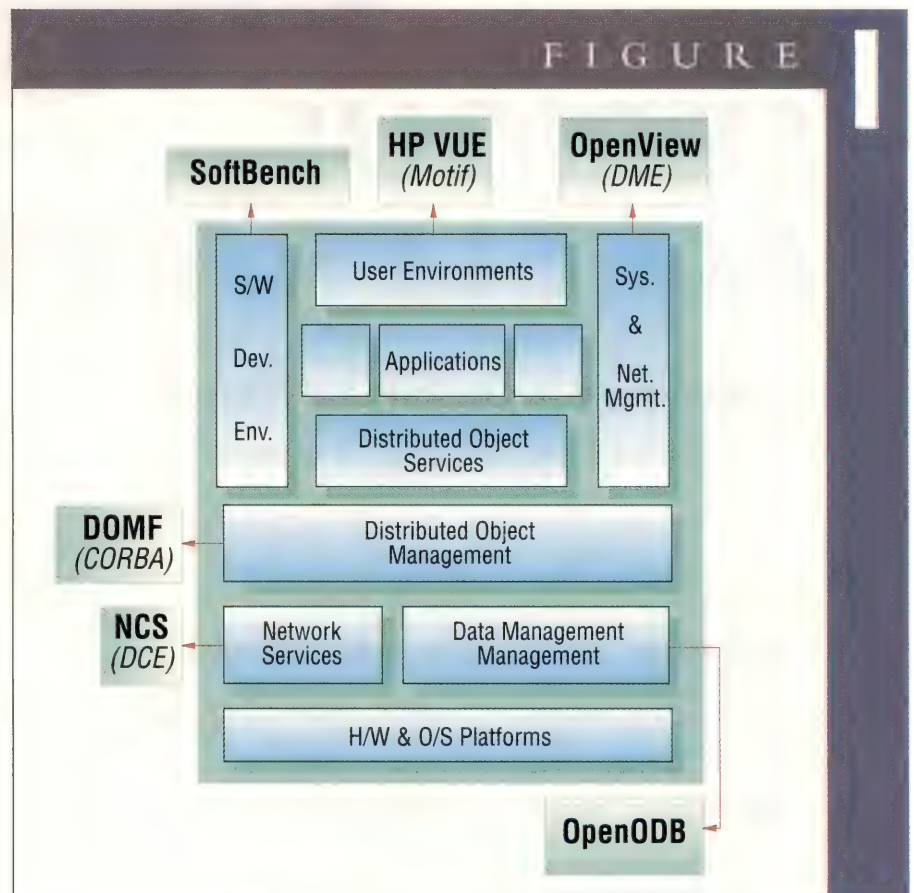
But hey, wasn't NewWave Computing going to do much of the same thing? Not quite. NewWave was based primarily on Windows technology. HP's new object strategy requires a basis for its systems that will relate to more user interfaces than just Windows. In other words, HP wants to tie in *everybody*.

### Object-Oriented Future

This work springs from HP's aggressive involvement with the Object Management Group (OMG), an organization founded by HP and others to develop standards for object technology. OMG

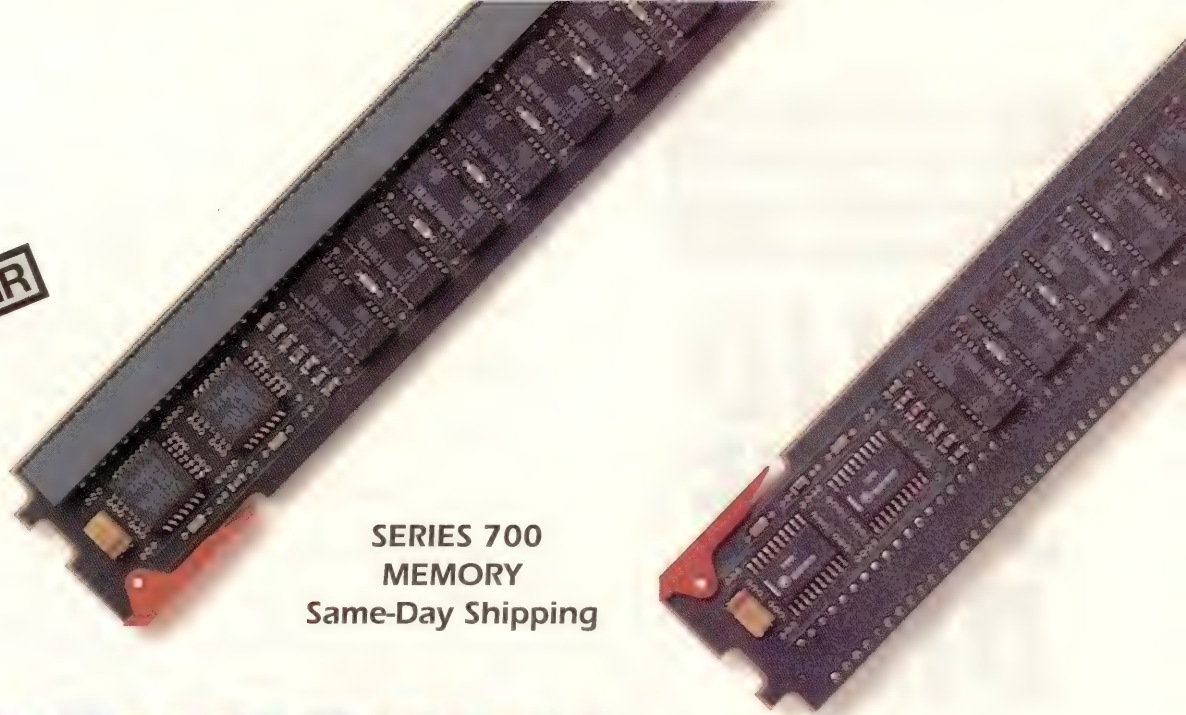
developed the Common Object Request Broker Architecture (CORBA) standard to allow users to use object technology without having to move to a new operating system. CORBA also allows existing "legacy" applications and data that are not object-oriented to run on new object-oriented systems; these applications simply won't take advantage of the object capabilities. Companies can move to the object-oriented systems in stages, when they are ready or when they can afford the expense and disruption of the change.

Part of the CORBA standard is the



HP's framework for Distributed Object Computing, showing links to existing standards and products.





**SERIES 700  
MEMORY**  
Same-Day Shipping

# EXCEPTIONAL MEMORY

## **Available now from Newport Digital.**

We deliver the quality and service you expect from the leader in HP workstation enhancements. Our complete line of TURBO cards and memory products is ready to ship from stock. Order today. Upgrade your system tomorrow!

## **Superior quality by design.**

Every product we make is rigorously tested and guaranteed to meet or beat HP quality... and each is backed with our unconditional lifetime warranty.

## **Remarkable value guaranteed.**

Evaluate any of our memory products in your workstation for 30 days. If you're not completely satisfied, return it without obligation.

CALL TODAY for complete information or to place an order for these and other innovative products from Newport Digital.



## **Comprehensive Selection**

HP Series 9000	MB	1	2	4	8	12	16	32
HP-200/310/320		■	■	■	■			
HP-319				■	■			
HP-330/350/370				■		■		
HP-332				■				
HP-340				■				
HP-345/375/380				■	■		■	■
HP-360				■	■	■	■	
HP-362			■	■	■			
HP-382				■	■		■	
HP-400/425/433				■	■		■	■
HP-425E				■	■		■	
HP-700RX		■	■	■	■			
HP-720/730/750							■	■

**NEWPORT DIGITAL**

**1-800-383-3642**

14731 Franklin Avenue, Suite A  
Tustin, California 92680  
(714) 730-3644

CIRCLE 488 ON READER CARD



**I/O BOTTLENECKS?  
SYSTEM PERFORMANCE  
PROBLEMS?**

# SOLID STATE DISK

**IS THE SOLUTION.**

Did you know?  
Your CPU can  
execute over 100,000  
instructions in the  
time it takes for one  
disk I/O. Find out  
how a DES SSD  
will dramatically  
increase your  
system's  
performance.

Call  
408/727-5497  
or fax  
408/727-5496  
today for  
more infor-  
mation.



- 35 MICROSECOND Total Access Time
- 0MB/Sec Data Rate
- Reduce User's Response Time
- Shorten Batch Job Processing

## DES

**Disk Emulation Systems, Inc.**  
3010 Scott Blvd.  
Santa Clara, CA 95054  
408/727-5497

Systems from  
different vendors  
with varying  
technologies can  
share the same  
object-oriented  
applications.

Distributed Object Management Facility (DOMF) technology developed jointly by HP and SunSoft. DOMF makes it possible to develop distributed, object-oriented applications that function independently of an operating system, graphical user interface or networking protocol.

Thus, systems from different vendors with varying technologies can share the same object-oriented applications. This places HP on a different path than IBM/Apple, whose promised new object-oriented operating system might require a disruptive shift. HP hopes to make the transition painless, says Marcus.

"Today, you can click and drag a spreadsheet into your word processor at your workstation," explains Marcus. "Customers want the ability to have a user at his workstation point and click at any spreadsheet, graphic, fax or whatever — and that object might be in any system on the network anywhere around the world — and simply drag that into the user's document." That ease of integrating any object regardless of its location is Marcus' objective.

"If a multinational corporation in Minnesota finds that customers are returning the product in Los Angeles," says Marcus, "they might want to get people in those locations to exchange a video of the defective product and documentation. In a video teleconference, they might drag and drop such objects into a common work area onscreen. Our customers want this, and it may be a reality later in the '90s."

Customer demand definitely exists

from larger firms that need such linkages in place. HP recently announced that it will accelerate its development efforts on a DOC environment.

In the meantime, the object-oriented solutions available now continue to garner attention in the marketplace. The Petrotechnical Open Software Corporation (POSC) has licensed documentation for HP OpenODB as a basis for defining standards to help petroleum companies manage and exchange information more effectively.

POSC selected OpenODB from a field of 29 submissions. This, along with the successes of other HP object-oriented products, indicates that HP is headed in an effective direction with its program, and we can expect to see lots more objects, with attendant clicking, dragging and dropping, in our future.

### Future-Oriented Objects

So, OK, you say, I like the sound of this, so give me some networked objects to chew on now. Sorrrrrrrrry. You can't have it yet. We are talking about future object bones here. Just to give you something to gnaw on in the meantime, however, let's take a look at the likely object future.

**1993:** Pieces of the puzzle will be going out to large customers and developers. HP's DCE, which began going out to large customers in 1992, will be available. HP's DOC layer will head out the door in 1993.

**Beyond 1993:** HP will begin shipping object-oriented products that take full advantage of DOC, according to Marcus. Does this mean that DOC versions of HP's object products will change them, so you will need upgraded versions to play along? Yep, says Marcus.

But this is an evolutionary process, and that's what makes these new bones from HP a bit more tasty than the old ones. We may have quite a while to work them over and make them all slippery slobbery in the middle of the living-room rug before anyone tries to snatch them away again. And next time, I plan to growl. ■

CIRCLE 459 ON READER CARD



# THE ONLY TAPE DRIVE THAT PUTS 25GB ON A SINGLE 8MM TAPE.



Do you wish you could find a backup system with enough capacity, speed, and sophistication to backup unattended?

Could you recreate a document from scratch in the time it takes you to restore it?

## **FAST BACKUP, FAST RESTORE.**

Introducing the CY-8500, the 8mm tape drive that gives you up to 25 GB on a single tape. And with transfer rates of up to 90 MB per minute, backup takes less time, frees resources, and makes frequent backup simple and convenient.

And that's not all. The CY-8500 offers fast file search capability. So you get the advantages of high capacity and

fast transfer rates plus the ability to locate and restore your files quickly – about 75 times faster than normal speed.

## **CONFIGURATION FLEXIBILITY.**

The state-of-the-art liquid crystal display gives you complete drive status information.

Command under execution, transfer rate, tape remaining, and ECC are presented in a clear easy-to-read format. By offering such features as data compression – for five times the storage capacity per tape – and data encryption – giving you data access control – the CY-8500 adapts to your company's growing needs. We'll adapt to your site requirements

too, with rack mounting options and cable lengths of up to 80 feet.

## **PROVEN TECHNOLOGY.**

Best of all, the CY-8500 offers peace of mind. 8mm helical scan technology, designed for data recording, gives you demonstrated performance and reliability. Not an adaptation of an audio recording format.

The CY-8500 is part of a complete family of tape backup products that range in capacity from the 250 MB ¼" cartridge streamer to the 3 TB cartridge handling system. All backed up by our in-house technical support group and 12-month warranty. For more information on how you can enjoy the best value in tape backup, call today at 804/873-9000.

## **TRUE "PLUG-AND-PLAY" COMPATIBILITY WITH:**

Alliant	HP	PC 386/ix
Alpha Micro	IBM AS/400	PC MS-DOS
Altos	IBM	PC Xenix/
Apollo	Mainframe	Unix
Arix	IBM RISC/6000	Pertec
AT&T	IBM RT	Plexus
Basic-4	IBM S/38	Prime
Concurrent	ICL	Pyramid
Convergent	Intergraph	Sequent
DataGeneral	Motorola	Silicon
DEC 3100/5000	Macintosh	Graphics
DEC BI-Bus	McDonnell	Stratus
DEC DSSI	Douglas	Sun
DEC HSC	NCR	Texas
DEC Q-Bus	NeXT	Instruments
DEC TU/TA81	Novell	Unisys
DEC Unibus	OS/2	Wang
Gould/Encore	PS/2	and more

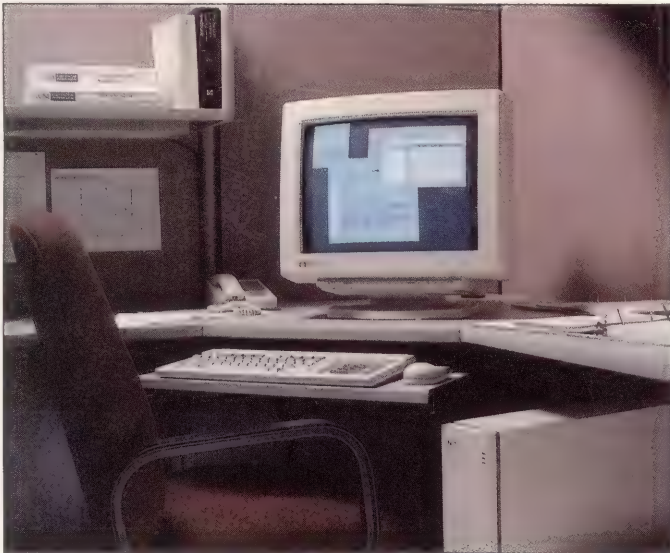
CONTEMPORARY  
**CYBERNETICS**  
*Group*

Rock Landing Corporate Center · 11846 Rock Landing, Newport News, VA 23606 · 804/873-9000 · FAX 804/873-8836

CIRCLE 112 ON READER CARD



## Advanced Planning



### CARP Systems' APS Manufacturing Application Tool Translates What-Ifs Into Accurate And Timely Analysis

.....

Have you attended a management meeting lately? Most likely, the priority on your CFO's agenda was to cut overhead. And, he probably stressed effective planning as the means to avoid wasteful and costly ends.

In a manufacturing environment, processes require intricate planning and coordination of order entry, forecasting, raw material resources, shop floor control and distribution.

Now, streamlining the planning process is aided by CARP Systems International's Advanced Planning System (APS), a suite of manufacturing planning applications and tools that extend the efficiency and planning analysis capabilities of your existing manufacturing resource planning (MRP II) systems.

The latest version, 1.3, now offers a new application building capability, which allows you to build an application specific to your needs.

Through a new Script Window, you can create query language scripts, which automatically create Motif-based graphical windows. New icons on the Schedule Summary window allow you to find commonly used planning functions easily. And, new commands in the Command Window allow for a better interface between the software and UNIX operating systems.

What stands out about the Advanced Planning System is its Planning Engine. Here, MRP runs are complete in seconds, whereas conventional MRP planning systems often take hours.

According to Cal Monteith, an inventory control manager at Compaq Computer, prior to the company's implementation of the Advance Planning System, MRP runs required six hours of CPU time per week. During this time, all computer functions were halted, leaving users without means to complete their work.

John O'Connell an independent consultant specializing in manufacturing systems for Pitney Bowes, boasts about the power of APS on his HP 9000/700 Series when assessing the reduced CPU time. "Run time off a VAX took 17 hours, while running off the workstation takes three minutes," says O'Connell.

Users can access data from the host-based MRP II system and can manipulate data to pose any "what-if" scenario in order to adjust to chang-

ing business requirements. Interactive planning of master production and materials and capacity planning makes for more accurate and responsive logistics plans.

John Sawyer, project manager of the Advanced Planning System at Sikorsky Aircraft based his interest in the product on its success at a sister company.

"We had seen the APS implemented at a sister company, and thought that the the simulator capacity could be helpful in planning future company activity say in sales or marketing," says Sawyer.

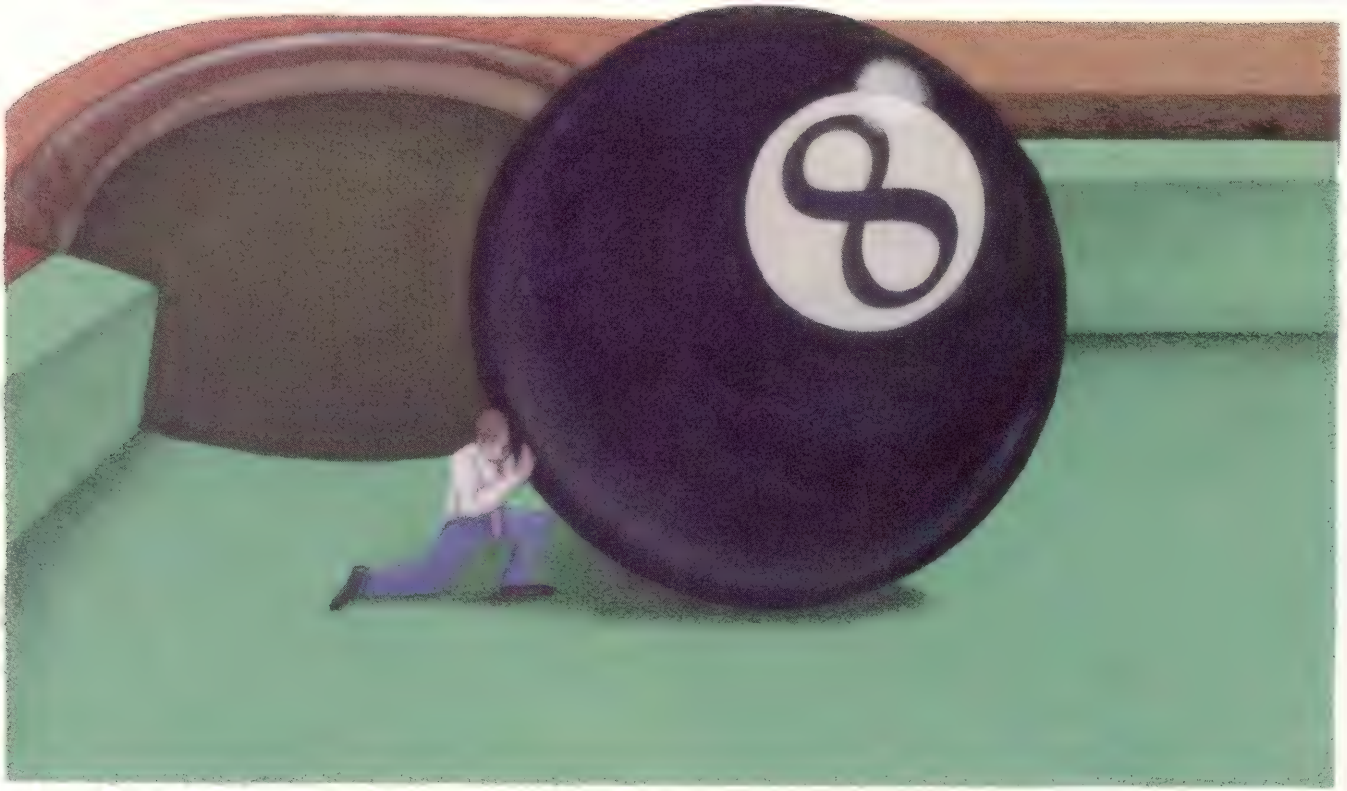
We used the simulator capacity [prior to implementing an MRP II system] with other MRP planners to show how an MRP II system would affect our general business planning and to help in decision making processes."

CARP Systems' APS is available on the HP 9000/700 Series. It works with home-grown MRP II systems as well as commercial packages such as ASK's MANMAN. Prices range from \$140,000 to \$400,000 depending on host MRP systems and data volumes. — *Andrea Zavod, Associate Editor*

**CARP Systems  
International**  
600 Terry Fox Dr.  
Kanata, Ontario  
Canada K2L 4B6  
tele: (613) 592-5780  
fax: (613) 592-0584

CIRCLE 304 ON READER CARD





*I Hate It When This Happens!*

## **Does Your Cobol Programming Backlog Have You Behind The Eight Ball?**

### **PROTOS**

800/531-5473  
In Texas: 512/327-8770  
FAX: 512/327-9484

Protos Software Company  
P.O. Box 164050  
Austin, Texas 78716 USA

If you appreciate the performance of COBOL, but are frustrated with the tedious and time-consuming coding requirements, you should be using the PROTOS programming language.

PROTOS is the full-featured programming language that generates the same COBOL source code that you are used to running, but with only a fraction of the programming effort. PROTOS also takes care of V-Plus and Image calls. If time is money, and you spend any significant amounts of time programming in COBOL, then you can't afford not to take a look at PROTOS.

**PROGRAMMING PRODUCTIVITY and MACHINE EFFICIENCY** - That's the name of the game. You need not sacrifice one to achieve the other. PROTOS is a rich programming environment with a powerful report writer built in. PROTOS is tuned to the HP3000 and its fundamental operating system. You can't buy a 4GL that is better suited to the MPE (V, XL or IX) environment.

**SOFTWARE DESIGN FLEXIBILITY** - During a recent survey of over one thousand HP3000 users, we found that 93% of the users of our competitors' products also program in COBOL to overcome the limitations of predetermined logic. PROTOS is completely free of such restrictions.

**Don't let yourself get snookered behind the eight ball.**

**PROTOS ..... FROM THE FIRST ITS FAST!**

CIRCLE 225 ON READER CARD



# Out In The Open



## DISC Delivers Improved Performance For TurboIMAGE/iX—And Drives OMNIDEX Into The Relational World

At INTEREX '92, Dynamic Information Systems Corp. (DISC; Boulder, CO) premiered OMNIDEX for Open Systems. The new release, Version 3.0, delivers improved performance and usability for the TurboIMAGE/MPE user base. More important for DISC, it moves OMNIDEX into the open systems arena and extends the product's advanced indexing technology to relational databases and non-MPE platforms.

The real value of OMNIDEX resides in its search flexibility and blazing performance. Highlights of version 3.0 include:

- Keyword searches, a word or value occurring anywhere in a field.
- Multiple key retrieval with Boolean and relational operators.
- Wildcard and pattern matches.
- Case insensitive, phonetic (soundex) and synonym searches.

- Optimized joins.
- Ten to 100-fold increase in speed over conventional capabilities.

For retrievals and index creation, the new OMNIDEX is three to four times faster than the previous version. Sophisticated data compression techniques have reduced indexes to less than one third of the space required under Version 2.0. A new point-and-shoot utility, OmniUtil, simplifies the creation and maintenance of indexes. (Indexes now can be external to the target database, eliminating downtime during index creation.) And OMNIDEX 3.0 is completely integrated with the new TurboIMAGE/iX third-party indexing APIs so that it can be accessed through standard IMAGE intrinsics.

### Relational Juggernaut

The extension of DISC's indexing technology to RDBMSs (Oracle, ALLBASE, Informix, and Interbase — with more to follow) and new hardware platforms (HP 9000/HP-UX and RS/6000 AIX — with VAX/VMS to follow in '93) means a performance boost for open systems devotees as well.

The increased flexibility of relational database technology generally comes with a cost: poor retrieval performance. Complex queries that select data according to multiple search criteria can require enormous CPU and disk resources, particularly in processing joins. Relational databases typically use one

key at a time to select data and seldom offer full keyword retrieval.

OMNIDEX changes all that, eliminating the RDBMS performance penalty while increasing functionality.

At INTEREX, I witnessed a demonstration of OMNIDEX interfaced with Oracle on a HP 9000/730 running HP-UX. For multiple criteria selections, OMNIDEX provided at least a 100-fold performance improvement. A SELECT that required almost *three minutes* using standard Oracle SQL took less than *two seconds* under Oracle with OMNIDEX.

With OMNIDEX 3.0, DISC realized its indexing technology could be transferred to other DBMSs and platforms—that it was not tied to, nor dependent on, TurboIMAGE and MPE. In what was probably a bet-the-company move, OMNIDEX was re-engineered in C and simultaneously ported to multiple databases on multiple platforms.

The OMNIDEX 3.0 indexing kernel for TurboIMAGE/iX ranges in price from \$5,000 to \$31,500 depending on CPU size. The interface modules range in price from \$2,000 to \$12,500. OMNIDEX for Open Systems is priced at a per-user rate of \$500 to \$2,000 plus integration consulting fees. — *John Burke, HP 3000 Editor*

**DISC**  
5733 Central Ave.  
Boulder, CO 80301  
(303) 444-4000

CIRCLE 303 ON READER CARD



# WHATEVER STEPS YOU TAKE, ONLY ONE 4GL GUARANTEES TOTAL FLEXIBILITY.



## **FOCUS FROM INFORMATION BUILDERS:** The 4GL That Gives You The Options To Work With Any Database.

### **IS YOUR DATA FUTURE PROOF?**

Right now almost 90% of your applications use TurboIMAGE database. But, as you move towards relational or object databases, how will you integrate this new technology with your existing data?

### **WHERE TECHNOLOGY IS GOING, WE'RE ALREADY THERE**

Relax. Because now there's a new solution that lets you develop with the database of your choice. You can develop new or maintain existing TurboIMAGE databases and join TurboIMAGE with ALLBASE/SQL and KSAM. Or, convert TurboIMAGE, KSAM or even flat files to ALLBASE/SQL.

Whatever your preference is, we have the solution. It's FOCUS from Information Builders. The leading specialists in distributed information systems. FOCUS offers application development and decision support tools for integrating databases from HP, third parties such as Oracle, and in the future HP's OpenODB.

No other 4GL product comes with this breadth of functionality, bundled with an automatic database conversion tool!

### **ACCESS ALL OF YOUR DATA**

FOCUS is the platform independent application development tool that gives you an unmatched ability to create, control and integrate critical information systems within your enterprise.

And because FOCUS provides you with complete application portability and access to over 50 data structures across 35 operating systems, you can port any application to the HP and still have access to your legacy data.

So for guaranteed database flexibility the next step is easy. Call Information Builders, an HP Premiere Solutions Provider, for more information on FOCUS or to attend a FREE Seminar...

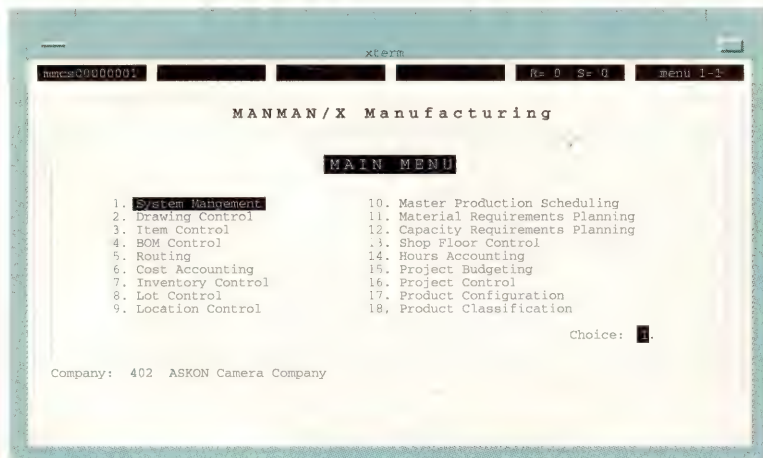
**Call 800-969-INFO**

In Canada call 1-416-364-2760

**IBI** **FOCUS**  
Information Builders, Inc.



## MANMAN Returns



### ASK Computer Systems Braves The Open Systems Jungle With MANMAN/X

ASK Computer Systems' flagship product, MANMAN, has been implemented in HP 3000 and DEC VAX environments worldwide for nearly 20 years. The package provides software solutions that help companies streamline manufacturing operations, control costs, manage inventory and maintain delivery schedules.

MANMAN/X is ASK's next generation of manufacturing business management software. Consisting of 27 integrated modules, the package runs on UNIX-based systems from HP, DEC and IBM. The software supports the INGRES Intelligent Database and the ISAM file system, and delivers concurrent operation in French, German, U.K. and U.S. English.

MANMAN/X provides two principal user tools — foundation and customizer.

Foundation lets you modify tables, the data dictionary and security parameters. Customizer lets you modify menus, screens and reports. Eventually, ASK

plans to make these tools database independent for those who want to develop applications using other databases and integrate them with MANMAN/X.

In addition to the MANMAN/X tools, you can use INGRES/Windows 4GL, Ingres' GUI-based tool and INGRES/Vision, a character-based tool to develop new applications that run with MANMAN/X.

#### A UNIX Hat Trick?

ASK maintains that MANMAN/X provides manufacturers a large, stable resource for a UNIX-based solution. Industry analyst Alice Green of Industry Directions, an independent research firm, believes, "As far as the big names, ASK is the first to move to UNIX platforms. However, this doesn't change the landscape of manufacturing decision making. ASK's entry into the ring in itself doesn't make UNIX a viable platform. It does make ASK a player in the UNIX market."

Green states that the desire to enter the European market drove the development of MANMAN/X. Green says, "Even though other large software developers will enter the UNIX arena. MANMAN/X has given ASK a strong foothold that leverages the company in Europe."

Green describes MANMAN/X as "catering to the

made-to-order market." She explains, "As companies become more flexible in meeting custom orders, the conducting of transactions such as order entry, tracking and delivery of products changes. MANMAN/X addresses this new way of doing business."

Matt Neimeyer is the MIS director for Groth Corporation, a beta site for MANMAN/X. Groth develops and supports safety and environmental products for the chemical, petroleum refining and power industries.

Groth evaluated many alternatives before selecting MANMAN/X. Neimeyer says, "We wanted a 4GL that supported multi-languages and allowed multiple windows-type applications."

In addition, MANMAN/X fit into Groth's plan to achieve the European ISO-9000 certification. "The certification will demonstrate to the European market our total commitment to quality. By allowing us to closely monitor and control all aspects of manufacturing, it fits our company's goals."

Pricing for MANMAN/X is user-based starting at \$25,000 for an eight-user system. For a 128-user system, MANMAN/X ranges from \$250,000 to \$300,000. — Charlie Simpson, Technical Editor

#### ASK Computer Systems

2440 W. El Camino Real

P.O. Box 7640

Mountain View, CA 94039-7640

Tel: (415) 969-4442

Fax: (415) 962-1974

CIRCLE 305 ON READER CARD



FOR HP

# Storage facility.

Now, you have easy access to unlimited storage options. Bering — the preferred name in peripherals for Hewlett-Packard computer users — provides a complete line of tape drives, removable cartridge drives, fixed hard drives and combination subsystems. You can count on Bering for compatibility, reliability, convenience and service.

Our newest feature, standard on many of our models, allows conversion from HP-IB to SCSI interface with the simple push of a button. Migration to the latest SCSI-based computer systems is easy and economical. Bering's unique built-in dual interface switch allows the same drive to integrate with either interface.

That's extra value, and yet another good reason to buy Bering.

## 4mm DAT/DDS Technology **ECHO Series**

High Performance, High Capacity  
2GB DDS Tape Cartridge Backup  
Subsystem. Fast, efficient and cost  
effective. HP DDS compatible. SCSI and/or HP-IB interface.

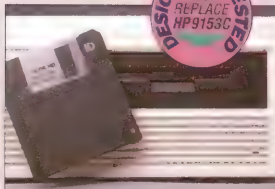


## 8mm Technology **ECHO Series**

High Performance, High Capacity  
Tape Backup Subsystem. Up to  
5GB on an inexpensive cartridge.  
SCSI and/or HP-IB interface.

## Winchester Technology **ECONOPAC II Series**

High performance 80MB to 1.7 GB  
fixed hard drives for basic storage  
needs. HP-IB and/or SCSI interface. HP-IB drives are available with  
2.0MB FDD. Designed and tested to replace the discontinued HP9153C  
hard disk and floppy disk drives.



Convert between SCSI and HP-IB interfaces  
with the simple push of a button.

## Rewritable Magneto-Optical Technology **OPTIPAC Series**

Up to 128MB on 3.5-inch, or  
650MB to 1GB with 5.25-inch  
cartridges. Rewritable, Removable Magneto-Optical Cartridge Drives in  
combination with a fixed hard drive up to 500MB. SCSI and/or HP-IB.  
Multifunction model also available.

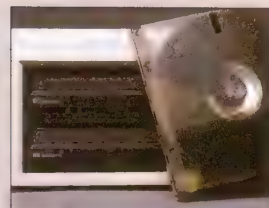


## Bernoulli® Technology **MULTIPAC Series**

Single or Dual, 44MB or 90MB Removable  
Cartridge Drive models. Available in combin-  
ation with fixed hard drive. HP-IB interface.  
90MB model with SCSI and/or HP-IB.

## SyQuest® Technology **MEGAPAC Series**

Single or Dual, 44MB or 88MB  
Removable Cartridge Drives.  
Available in combination with  
fixed hard drive. SCSI and/or HP-IB interface.



HP 9000, 1000 and 3000 computer users —  
the storage options are stacked in your favor.

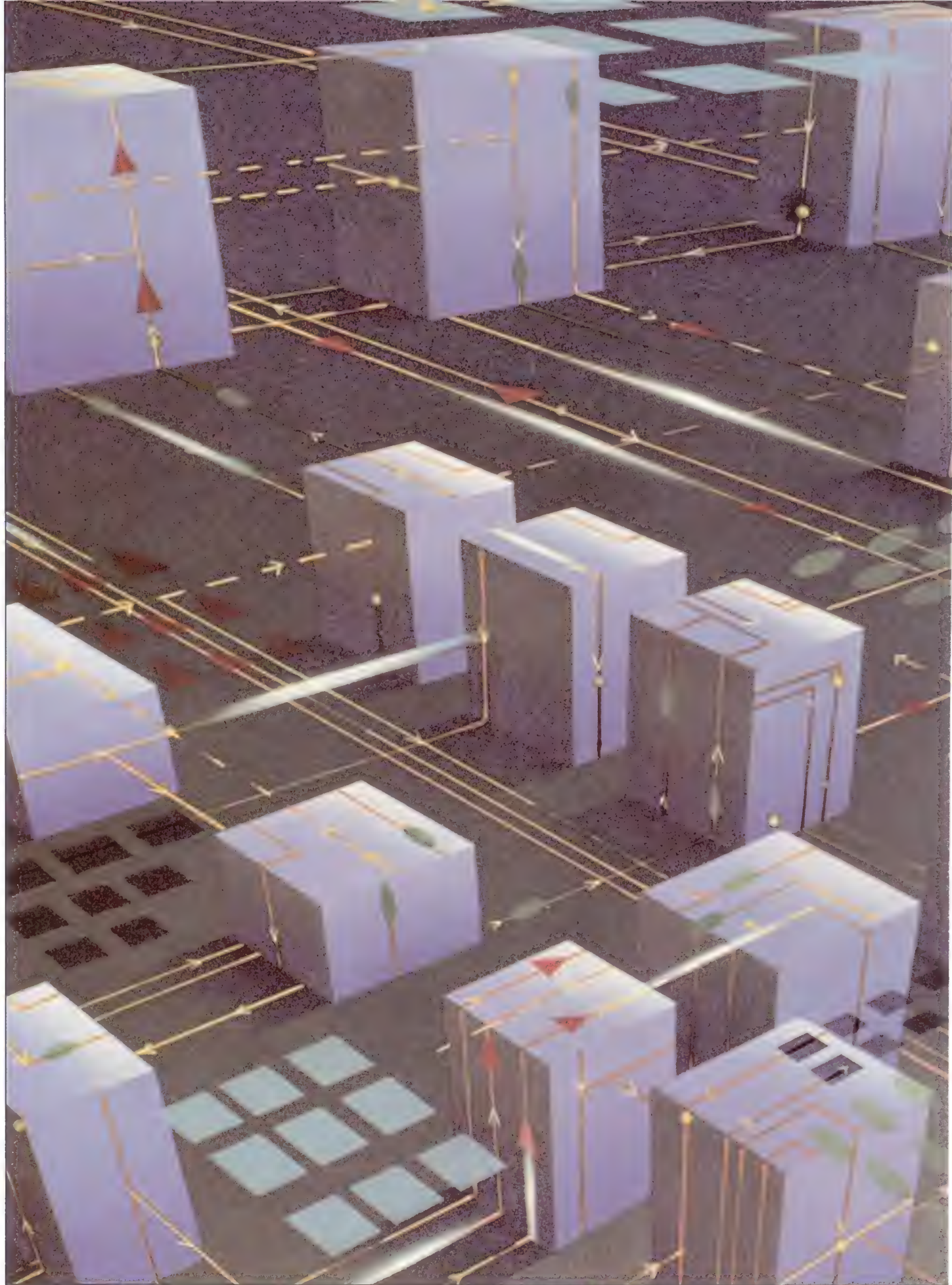
# BERING™

© 1992 Bering Industries, Inc.  
Echo, Econopac II, Optipac, Multipac and Megapac  
are trademarks of Bering Industries.  
Other product names are trademarks of their respective owners.


Bering Industries, Inc.  
246 East Hacienda Avenue  
Campbell, California 95008  
800 237-4641 408 379-6900  
fax 408 374-8309

CIRCLE 105 ON READER CARD









# No STRINGS ATTACHED

**The Ultimate In Portable Computing,  
Wireless Data Networks Signal New Freedom  
For Manufacturers**

By Paula Jacobs

In the competitive automobile manufacturing business, it's critical to be able to track machine failures and monitor defective parts in real-time. The factory floor environment also requires equipment that's reliable, easy-to-move and can withstand rugged conditions.

That's why Ford Motor Company's Plastic and Trim Products Division relies on Radio Frequency (RF) terminals to input data to its manufacturing applications. The plant uses Norand wireless terminals that connect over a radio frequency backbone and broadcast equipment to HP 9000 (720 and 730 Series) computers running HP-UX, Oracle and U.S. Data's FactoryLink software, which is also linked to an IBM mainframe.

"We needed a flexible way to input data," says Dave Lewis, supervisor, Manufacturing Systems Section, Plastic and Trim Products. Because the company already had an RF backbone



in place for its IBM equipment, Lewis says, it was easy to add additional RF equipment for the HP manufacturing application. The RF terminal is configured with a dual-host controller that supports both the HP system and the IBM mainframe used for a materials management application. Remote data collection on the HP system is part of a suite of factory floor applications designed to track downtime and monitor defective parts.

"Meanwhile, the hand-held units are intrinsically safe," says Rick Evans, CIM systems analyst at Ford. "Press operators or quality control workers can take them right into paint mix areas, and update information on-line."

"Remote data collection is essential on the factory floor, but hardware devices can be quite expensive particularly as factory floor devices must be relocated frequently," explains Ross Goldman, Ford's system analyst who designed the system. "However, with wireless, this problem is no longer true. We now have a reliable, flexible system, with communications among our different computer systems."

And at Hewlett-Packard's DeskJet production facility, when material handlers need to order parts, they simply enter their order right from the production line into an LXE RF wireless handheld terminal. This device, connected to a Radio Frequency Base station, communicates over a TCP/IP

LAN connected to HP 9000 systems located throughout the Cameth, WA, site.

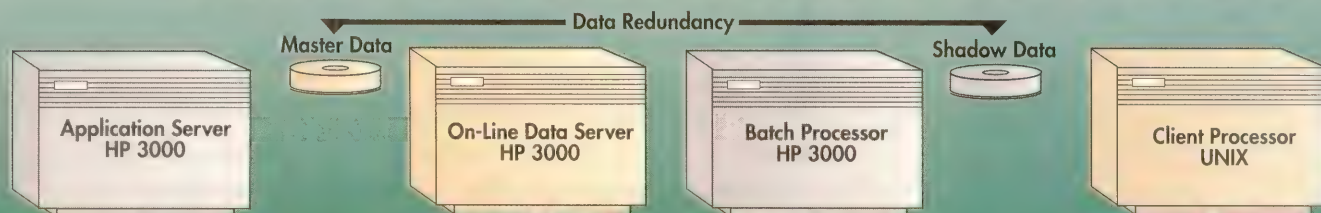
"Flexibility is key," says CIM Software Engineer, Joan Armstrong. "With handheld terminals on their belts, the plant's material handlers use the DemandLink manufacturing application to request parts from our inventory stores."

In addition to material management, wireless terminals also offer significant benefits for inventory control, labor tracking and work order status. In receiving, they can help eliminate delays and improve quality control. For warehousing applications, the benefits include real-time cycle counting and more accurate FIFO stock rotation. In shipping, the use of wireless terminals can provide faster invoicing and improve the verification of complete shipments.

### HP Palmtop Hits The Airwaves

**H**EWLETT-PACKARD HAS MADE a significant commitment to wireless on several fronts. As a member of WINForum (see sidebar, "Datacom's Slice Of The Dial") HP has been working with participating companies and the Federal Communications Commission (FCC) to support a new radio spectrum for voice and data transmission.

## NEED HORIZONTAL GROWTH?



802.3 LAN OR ANY HP WAN LINK WITH NETBASE

**N**etBase is comprehensive networking software that allows a network of computers to work together as one large system. Data centers with one or more computers can immediately benefit from NetBase's powerful capabilities.

If your organization has a need for more processing power, transparent network file and program access, or fault tolerance, NetBase is the solution. Whether it's Unix, MPE, or DOS based clients, NetBase services allow you to preserve your hardware and software investment while moving toward Open Systems solutions.

Companies needing more compute power can simply add another computer and use NetBase to distribute their applications. The result is better performance and less cost.

- ◆ Spreads file and database I/O across nodes (database engine)
- ◆ Increases application performance
- ◆ Remote file access without remote sessions or DSLINES
- ◆ No application changes required
- ◆ Immediately improves performance for users of NS/3000
- ◆ Shows network activity for security and monitoring
- ◆ Uses low overhead transport algorithms
- ◆ User exits (API's) increase functionality and flexibility
- ◆ Support for NFS clients



## DATAKOM'S SLICE OF THE DIAL

The Wireless Information Networks Forum (WINForum) is an alliance of industrial, user and research community members who are working together to obtain, and effectively employ the radio spectrum for user-provided, voice and data personal communications services (User-PCs). WINForum has concluded that User-PCs should be developed in the Emerging Technologies bands at 2 GHz.

WINForum evolved from a working group of the computer industry concerned with a spectrum for wireless LANs, as originally proposed by Apple Computer in its petition for 40 MHz of radio spectrum to be allocated for Data-PCs.

Participating members of The Wireless Information Networks Forum include approximately 30 companies, including PC, workstation, and minicomputer manufacturers; telecommunications vendors; and networking companies. Members include HP, Sun, DEC, IBM, Rolm, AT & T, Ungermann-Bass, Windata and other leading vendors.

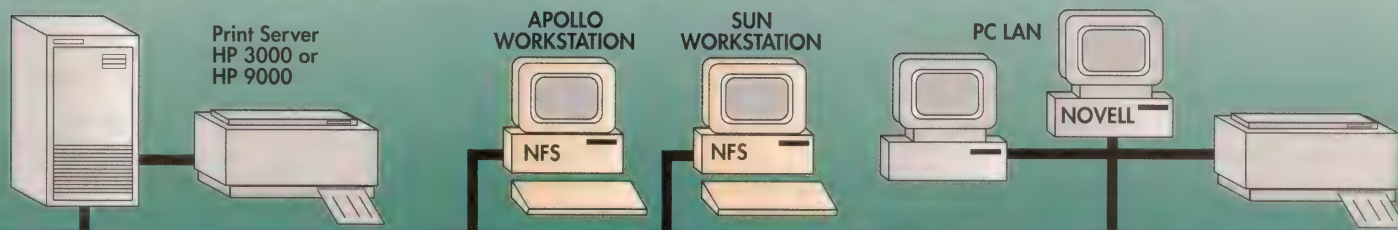
HP is also the first vendor to offer wireless communications for a palmtop computer and has formed marketing agreements with Ericsson GE Mobile Communications and Skytel, leading third-party wireless vendors for both wireless one-way and two-way communications.

Wireless one-way communications enables users to receive one-way radio broadcasts of messages and updates. To address this need, HP makes both Skytel Skystream and Motorola's NewsStream product available.

Skytel and HP are jointly marketing the Skystream wireless communications link to the HP 95LX palmtop. HP 95LX users who subscribe to the Skytel paging service can receive text messages or calendar and spreadsheet updates from Skytel's satellite-based messaging network in 170 major metropolitan areas and cities throughout the U.S. Also required is the Skystream advanced information receiver and the HP Mobile Data Link, HP's cradle and software to connect the HP 95LX with the Skytel receiver (actually manufactured by Motorola as "NewsStream"). Mobile Data Link and Skystream are boxed and sold by HP retailers.

Together with the HP 95LX, the Motorola NewsStream provides the same capabilities. Users also must subscribe to either the Skytel or the EMBARC national paging services.

# WITH NETBASE YOU'VE GOT IT!



## GROW WITH NETBASE-UX

If your move toward Open Systems includes MPE, Unix, and Client Server architecture, NetBase/UX provides the total solution for seamless integration.

Using NetBase/UX, applications designed to run on your host machine can be off loaded to a Unix processor or workstation and directly access TurboIMAGE databases on the HP 3000 computers. Since NetBase/UX maintains a centralized directory that defines the database names and locations available to Unix users, administration is simple. When a Unix application opens a TurboIMAGE database, NetBase/UX automatically establishes a connection to the target HP 3000. Since NetBase/UX uses high speed network caching algorithms, access is fast. If your data center is downsizing, looking toward Open Systems or just needs an increase in overall processing power, get the boost you need with NetBase/UX.

FOR ADDITIONAL INFORMATION OR A DEMONSTRATION TAPE CONTACT:



Quest Software, Inc 610 Newport Center Drive, Suite 890,  
Newport Beach, CA 92660 Phone: 714-720-1434 Fax: 714-720-0426

### In Europe Contact:

System Software (Int.) UK (+44) 0905 794646  
ORBIT (+33) 40 25 16 50 France  
(49) 30 852 70 97 Germany  
(31) 2979 11468 (Benelux) B.V.  
(45) 42 33 59 59 (Scandinavia) AB  
(34) 3 280 32 54 Spain



CIRCLE 268 ON READER CARD



Users must purchase the NewsStream receiver and cradle as well as EMBARC software from Motorola.

"We feel that the HP 95LX is an ideal platform for wireless because it is so small," says Clain Anderson, manager, Solutions Development Group at HP. "We recognize the importance of mobile information products, particularly the need for solutions to surpass simple paging."

For two-way communications, HP 95LX users can subscribe to the RAM Mobitex network, which provides for two-way radio broadcast of messages and information in 10 major metropolitan areas and cities throughout the United States. By connecting the Ericsson GE Mobidem portable modem to the HP 95LX serial port, users can send and receive messages via the Mobitex network, which uses "packet radio" technology. Users also can engage in interactive PC sessions with other Mobitex users via the Mobidem modem and the HP 95LX.

HP also offers two-way communications with infrared beam for transferring data or print output. By placing two HP 95LXs with built-in infrared ports opposite each other, users can transfer files from one to another. Additionally, when combined with an infrared JetEye sensor box from Extended Systems, the HP 95LX can send data to a LaserJet printer.

## Message: Ubiquitous Computing

**P**AUL CALLAHAN, AN ANALYST with Forrester Research (Cambridge, MA) says that sales acceleration and service delivery are the two critical areas for wireless applications, and cited timeliness, cost, and the opportunity for increased customer contact as three key factors when considering wireless. According to a 1992 Forrester Research Wide Area Wireless Data Network Strategy Report, U.S. wide area wireless shipments are expected to grow from 138,000 units in 1993 to 784,000 in 1997.

Several wireless technology options are emerging. Wireless Wide Area Networks (WANs) provide connectivity throughout the United States, while Wireless Metropolitan Area Networks (MANs) provide connectivity within the major metropolitan areas. Supporting these technologies are packet radio, packet cellular, circuit cellular and satellite.

In addition, wireless local area networks provide connectivity within a limited area, such as a factory floor, multistory building, campus, or within a single floor. Still in its infancy stage, products such as Windata's FreePort wireless LAN, may prove effective where flexibility and mobility are key requirements. For example, manufacturing facilities and factory floors, with their thick concrete floors and noise interference, are often difficult environments in which to set up LANs. A wireless LAN offers an attractive alternative. Other useful wireless LAN applications in a manufacturing setting include inventory control for warehouse locations where it is often not practical to install cabling.

Alan Reiter, group executive editor, Mobile Data Report,

envisions a mix of wireless networks "because of the different advantages they offer." He explains that paging is an economical approach for one-way communications, while cellular is effective for two-way communications, such as electronic mail. "While most computer companies have awakened to the potential of wireless data, there's still uncertainty about its ultimate usage," says Reiter. "However, wireless may prove attractive for many specialized applications, particularly where it can improve job performance."

Brice Clark, mobile communications program manager at Hewlett-Packard says that the company sees wireless as a popular option for personal communications, but considers wireless communications and technologies such as wireless LANs as a complement to rather than a complete replacement for wire. "As for the future, computer companies have a vision of ubiquitous computing," says Clark. "As an enabling technology, wireless extends people's access to technology wherever and whenever it's required." — *Paula Jacobs is a marketing consultant and writer based in Framingham, MA, who specializes in the implementation of new technologies.*

Would you like to continue to see articles on this topic?

Circle on reader card

yes 346 no 345

Ericsson GE  
Mobile Communications Inc.  
15 E. Midland Ave.  
Paramus, NJ 07652  
(201) 265-6600

**CIRCLE 354 ON READER CARD**

Extended Systems Inc.  
5777 N. Meeker Ave.  
Boise, ID 83704  
(800) 235-7576

**CIRCLE 355 ON READER CARD**

Hewlett-Packard Co.  
Corvallis Division  
1000 NE Circle Blvd.  
Corvallis, OR 97330  
(800) 443-1254

**CIRCLE 356 ON READER CARD**

LXE Wireless Data Communications  
P.O. Box 926000  
Norcross, GA 30092-9200  
(404) 447-4224

**CIRCLE 357 ON READER CARD**

EMBARC/Motorola  
1500 NW 22nd Ave.  
Boynton Beach, FL 33426-8292  
(800) 362-2724

**CIRCLE 358 ON READER CARD**

Mobitex RAM Mobile  
Data Network  
One Rockefeller Plaza  
Suite 1600  
New York, NY 10020  
(212) 373-1930

**CIRCLE 359 ON READER CARD**

Norand  
550 Second St. SE  
Cedar Rapids, IA 52401  
(319) 369-3100

**CIRCLE 360 ON READER CARD**

Oracle Corp.  
500 Oracle Parkway  
Redwood Shores, CA 94065  
(415) 506-7000

**CIRCLE 361 ON READER CARD**

Skytel  
255 E. Pearl St.  
Jackson, MS 39201  
(800) 456-3333

**CIRCLE 364 ON READER CARD**

U.S. Data  
2435 N Central Ewy.  
Richardson, TX 75080  
(800) 527-0593  
(214) 680-9700

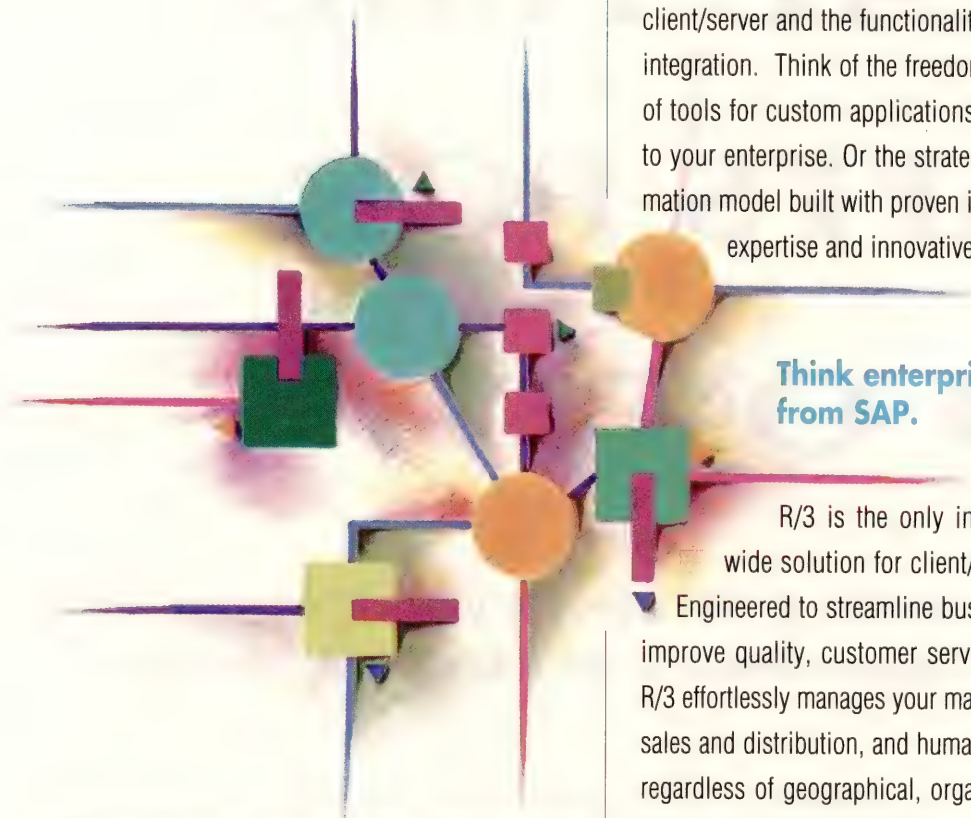
**CIRCLE 363 ON READER CARD**

Windata Inc.  
10 Bearfoot Rd.  
Northboro, MA 01532  
(508) 393-3330

**CIRCLE 362 ON READER CARD**



# R/3. For the open-minded enterprise.



*SAP has engineered the integrated software, the data models and tools — and the client/server strategy — to deliver the results you need. Find out more. Call 1 (800) USA-1SAP.*

Imagine software so well-engineered that it runs across organizational, technological, and geographical boundaries. Consider the flexibility of multi-level client/server and the functionality of true applications integration. Think of the freedom that a complete set of tools for custom applications development brings to your enterprise. Or the strategic value of an information model built with proven international business expertise and innovative software savvy.

## Think enterprise applications from SAP.

R/3 is the only integrated, enterprise-wide solution for client/server. . . and more.


▼ Engineered to streamline business processes and improve quality, customer service, and profitability, R/3 effortlessly manages your manufacturing, financial, sales and distribution, and human resources functions regardless of geographical, organizational or technological boundaries. R/3. Consider the implications.

## Imagine the results.



SAP • Amsterdam • Atlanta • Brussels • Budapest • Chicago • Copenhagen • Heidelberg  
Hong Kong • London • Madrid • Milan • Paris • Philadelphia • San Francisco  
Singapore • Stockholm • Sydney • Toronto • Vienna • Zurich





# REAL TIME WAITS FOR NO ONE

With The HP 1000 Entering Its Dotage, HP Introduces New RISC-Based Industrial Workstations And A Board-Level Real-Time System

Keep a computer system around long enough, and it develops a following with loyalty that approaches religious fervor. Or maybe it's the other way around; loyalty promotes longevity. In HP circles, the HP 1000 real-time system—now more than 25 years old—is just about as legendary as is Digital's PDP-11 in the DEC community.

Unfortunately, the downside to legends is that—like Ronald Reagan—they're *old*. Although there are thousands of companies blithely running their process control and data acquisition applications on HP 1000s—with no plans in place to change—people putting new real-time systems in place want younger, peppier, cheaper, standard systems.

Until recently, HP hasn't had much to offer them. HP 1000 users have looked longingly at the inestimable price/perform-

BY ELAINE APPLETON





# IMPLEMENT THE FUTURE... CLIENT SERVER, WINDOWS BASED, ACCOUNTING SOFTWARE.

Intuitive leaps in technological development have enabled civilization to progress toward a more efficient and productive tomorrow. The next logical step for your business is VISUAL/XL, the intuitive use, graphical interface financial management software. Smith Dennis & Gaylord once again provides innovation for today's solutions, while continuing to address the future needs of your business. Write, call, or FAX for a free demonstration disk... Discover the next logical step in business software.

**HP-3000  
ACCOUNTING SOFTWARE.  
FREE DEMO DISK!**



**SMITH,  
DENNIS &  
GAYLORD, INC.**

3211 Scott Boulevard.  
Santa Clara, CA 95054-3078  
(408) 727-1870  
FAX (408) 562-4187

NAME/TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_

TELEPHONE \_\_\_\_\_

FAX \_\_\_\_\_

WE EXPECT TO INSTALL NEW SOFTWARE...

☐ 3-6 MONTHS

☐ 12 + MONTHS

☐ 6-12 MONTHS

☐ JUST LOOKING

**VISUAL/XL MODULES:**

**GENERAL LEDGER   PAYABLES   RECEIVABLES   FIXED ASSETS   PROJECT CONTROL  
PROJECT BILLINGS   ORDER MANAGEMENT   PURCHASING/INVENTORY   PAYROLL/PERSONNEL**

CIRCLE 497 ON READER CARD



ance of HP's Series 700 PA-RISC workstations. Until a few months ago, however, those high-performance, low-priced systems remained unavailable for anyone running real-time applications.

## The Young Lions

**I**N LATE SEPTEMBER, HOWEVER, HP announced the first Series 700 model capable of running a real-time operating system. The HP 9000 Model 742rt is a 50 MHz, VME board-level computer capable of 57 mips. HP rates the system, based on the new PA-RISC 7100 chip set, at 60 SPECmarks. Compared to full-scale HP 1000 systems, it's cheap—under \$9,000. And it's standard—kind of. It runs HP-RT, a POSIX-based real-time system that, to developers and users, looks and smells like UNIX, but that, thankfully for real-time applications, doesn't behave in UNIX's blindly fair, time-sharing manner. Rather, it's designed for hard real-time applications, meaning that responses to interrupts are predictable (in real-time jargon, "deterministic") and bullet-train fast—under 100usec.

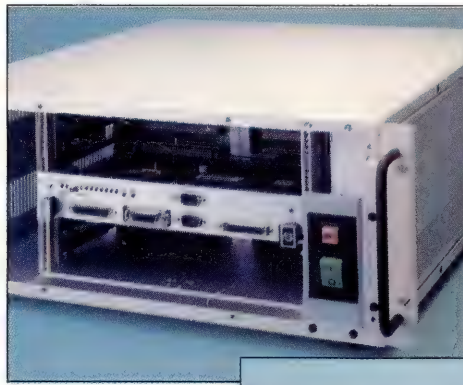
The first of a family of HP-RT based systems, the 742rt sits in two 6U VMEbus slots. Standard on-board I/O includes Ethernet, SCSI II, dual RS232, AUI and Centronics.

The 742rt, which should ship early next year, is designed to provide the real-time community with many of the benefits already accorded to PA-RISC users: client-server architectures; PA's great price/performance; the HP-UX development environment, including SoftBench CASE tools; and, because of its UNIX-based operating system, a useful synergy with HP-UX and other UNIX platforms that already sit in manufacturing and other real-time environments.

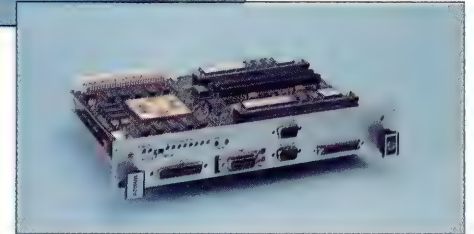
All of that means, theoretically, that operators and developers comfortable in the UNIX environment won't have to struggle (any more) to learn a proprietary real-time operating system like RTE. Instead, they'll be able to run both real-time applications, like process control, and non-real-time applications on UNIX platforms and with familiar UNIX system calls and application programming interfaces.

## Long Time Coming

**H**P FOLLOWED A TORTUOUS route to standards-based real time, at times taking two steps back for every one taken forward. In the early 1980s, Eastman Kodak Co. (Rochester, NY) had one of the largest installations of HP 1000 systems around—more than 100 systems churned away, gathering data in the lab and on the manufacturing floor. But HP didn't keep up with real-time technology from 1983 to 1985, and Kodak—like other HP 1000 user organizations—moved away from the 1000, says Paul Gerwitz, a systems analyst and part of a group responsible for Kodak's midrange computing. While Kodak still uses HP 1000s, most newer applications were designed around VAX/VMS systems. Kodak wasn't



*Model 742rt real-time computer system (shown in standard VME crate) and the Model 742rt real-time computer system (front view).*



alone: HP was losing its lead in real-time. Almost 10 years later, HP is struggling to regain that lead.

Over the last several years, while HP has been trying to chart its real-time course, HP 1000 users have been moving non-real-time applications to UNIX, says HP 1000 Program Manager David Fastenau. "What's been missing for the majority of our customer base is somewhere to take their hard, true real-time microsecond-deterministic response-time needs," he says.

That's the issue HP addressed when it began working with Lynx Real Time Systems Inc., the Los Gatos, CA, developer of Lynx OS and a crucial partner in the creation of the 742 RT. The 742's operating system, HP-RT, is actually Lynx OS dressed up with some HP-UX calls and tools. Self-hosted development is impossible, but developers can use HP-UX tools on servers like the Series 800 to create and debug applications for the 742, and download those programs to the real-time system. For development in the same "box," the 742rt can be built in to a new HP-UX industrial workstation, the 747i, also introduced in September.

## The Lost Art Of RTE

**T**HIS REAL-TIME SYSTEM IN UNIX's clothing addresses an increasingly serious problem in the real-time community: a lack of willing, experienced HP 1000 programmers. "We just look and look and look and look [for them]," says Kodak's Gerwitz. Rare is the programmer who can maintain an HP 1000 application, especially because RTE—and the needs of the data acquisition—encourage developers to write at the bit level. People with the experience and "ability to answer the very difficult questions that developers can come up with ... are very difficult to find," Gerwitz says.

But this dearth of HP 1000 programmers is only one reason why a standards-based real-time system could be appealing to HP 1000 users who have been awaiting a next generation. Another is cost.

"The problem that the HP 1000 has had ... is that it was rela-





# Kingston's Ahead In Hewlett-Packard Memory

## 9000 300 & 400

- 375
- 380
- 400dl
- 400s
- 400t
- 425e
- 425s
- 425t
- 433s

Kingston Technology keeps you ahead with memory for the latest HP workstations. Kingston manufactures upgrades that are built to give you the best performance and reliability.

Kingston provides you with:

- Lifetime warranty
- 100% compatibility
- Individual testing of each module
- Free technical support
- 24 hour exchange policy

Kingston's quality upgrades meet or exceed all system manufacturers' specifications. For more information on how to get ahead with Kingston upgrades, call us at:

**800-835-2545**

Ph. 714-435-2667

Fax 714-435-2618

East Coast 516-673-6300

Manufactured by

**Kingston**  
TECHNOLOGY CORPORATION

17600 Newhope Street  
Fountain Valley, CA 92708

## 9000 700 & 8x7S

- 700/RX
- 705
- 710
- 720
- 730
- 750
- 807S
- 817S
- 827S
- 837S
- 847S
- 857S
- 867S
- 877S
- 887S
- 897S

## 3000 9x7 & 9x7LX

- 937
- 947
- 957
- 967
- 977
- 987
- 917LX
- 927LX
- 937LX
- 947LX
- 957LX
- 967LX

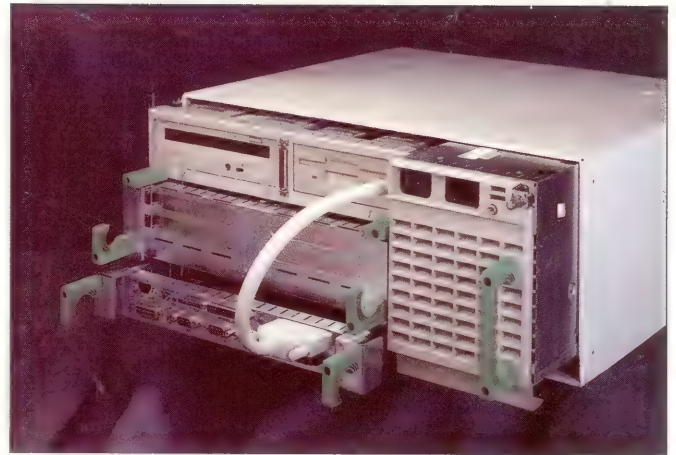


tively costly," says consultant Nelson. "Although you might be able to buy an A400 for under \$15,000, when you bought software and disk and LAN adapter, by the time you loaded it up and installed it, you were talking about \$100,000 for a single CPU. That's a whole lot of money to spend on a single cell. If I were designing [systems] I would seriously say I want something cheap, especially if it has the HP name on it."

## Real-Time Migration

**W**HILE THE 742rt IS LIKELY to be a welcome addition to HP's real-time offerings, questions remain. Migrating from RTE probably won't be easy. RTE system calls will have to be changed to their POSIX equivalent, although this is not a difficult task, says HP's Fastenau. But drivers to HP 1000 I/O cards will have to be rewritten as VME drivers—a step up in difficulty. And, says Fastenau, if users have "microprogrammed the A Series or the E and F Series ... our recommendation would be to redo that in a higher level programming language — in C."

In fact, the HP 1000 migration path is still unclear enough that HP systems engineers will be available to help user organizations determine whether they should port or rewrite applications. And in an apparent admission of the difficulty of moving applications, HP is donating to INTEREX several migration tools originally used to migrate from RTE-A to HP-UX, including the Migration Analysis Utility (MAU) and Libnat.A.



*Model 745i Industrial Workstation.*

But migrating from RTE to any alternative platform would be a problem, and in the final analysis, any standards-based real-time system has a high probability of success, despite such potential headaches. Why? As consultant Nelson puts it, "I would not buy a system today that was not standards-based, unless it had a feature I just couldn't get elsewhere." — *Elaine Appleton is a freelance writer, specializing in technology and information systems, based in Newburyport, MA.*

Would you like to continue to see articles on this topic?  
Circle on reader card  
yes 342 no 341

## COULD PA-RT BOX YOU IN?

When is UNIX not UNIX? Any system manager worth his salt should by now be asking whether a UNIX-like operating system that has been rewritten from the ground up to rid the OS of its essential "UNIX-ness" can coexist smoothly with HP-UX.

It seems perverse, but then, this is the world of standards we're talking about. According to Inder Singh, president of Lynx Real Time Systems Inc., developer of Lynx OS, the operating system upon which PA-RT is based, Lynx OS is as standard as it gets. That means it:

- Runs UNIX applications (almost 100 currently run on Lynx OS, but Singh admits they have yet to be ported to PA-RT).
- Includes TCP/IP and NFS connectivity protocols.
- Will support X.25, DECnet and ISO through third parties.
- Employs the POSIX 1003.4 real-time extensions (still in draft form). This draft is "basically an application programming interface," says Singh—calls necessary to support several realtime functions in a standard way. The draft includes calls for realtime scheduling, semaphores, asynchronous I/O, contiguous files, support for timers and locking memory.
- Supports X-client and OSF Motif GUI libraries.

On top of all that, HP added many of its own tools (in a modular fashion, so you can choose what you need) to the multiprocessing,

multithreaded Lynx OS to come up with PA-RT, the idea being that PA-RT should not only link gracefully to HP-UX systems, but that the only way to develop applications for systems running PA-RT will be to do so on HP-UX servers and workstations. You'd use the HP-UX development environment for designing, compiling and linking real-time applications and the RT kernel, as well as HP-UX hosted cross debuggers for kernel, driver and application development. Additionally, the OS supports HP-PA Assembly, HP C/ANSI C, C++ and the Ada compiler, run-time libraries and support. On the hardware side, the 742rt offers HP 700/RX X Terminal support, as well as that of many HP SCSI devices, HP 700/x Serial Terminals and HP Centronics printers.

No one's promising everything will be easy. But in an era that's seeing real-time operating systems move into the hearts of automatic teller machines (ATMs) and HP LaserJets as well as air traffic control towers, voice-mail systems and medical laboratories, the more links HP can make between its new real-time operating system and its tried-and-true HP-UX environment, the better.

Those links keep harried systems managers from feeling, well—all boxed in.



# Tired of looking for the data you need?

Now with SUPERDEX\*/SuperSELECT,  
you get only what you ask for... **FAST.**

SuperSELECT runs in front of any existing program that executes a serial read to intercept and replace the serial read with a directed SUPERDEX read — with **no program changes** to the existing software.



**SUPERDEX**

**SuperSELECT**

A normal serial read report can run for hours, as opposed to **minutes or seconds** using SuperSELECT. That's because SuperSELECT "pre-qualifies" the records your program would have qualified itself, allowing SuperSELECT to read only the qualified records instead of serially reading the entire dataset. All that SuperSELECT requires is the name of your dataset(s), SUPERDEX path(s) and argument(s)... that's all it takes. SuperSELECT does the rest with lightning speed.

So why spend wasted hours and resources on reports that run via a serial read, when you can access the exact records you need in seconds. Call **1-800-ASK-BRAD** for the Database Specialist nearest you, and discover the speed and power of SUPERDEX/SuperSELECT for yourself.

CIRCLE 108 ON READER CARD

## Regional offices:

Houston, TX   San Jose, CA   United Kingdom  
(713) 621-2808   (408) 879-1630   (44) 905-7954444



**BRADMARK**  
Technologies, Inc.

\* SUPERDEX is a trademark product name of Bradmark Technologies, Inc. for the SI-IMAGE package developed and implemented by Dr. Wolfgang Matt.





# THE RAGE TO RE-ENGINEER

**Downsizing Fever  
Has Swept  
Corporate America —  
Now MIS Must Steer  
The Course  
To Enterprise-Wide  
Client-Server  
Networks**

With technology changing at such a rapid pace, it's easy to be confused as to the potential future directions of corporate IS. Regardless, the end result of these developments should benefit the user community by giving them the information resources they need where and when they need them.

Because of the rapid increase in computer performance and the evolution of standards, business organizations now have an opportunity to achieve two important goals: reduce and contain costs and implement an information technology that can grow and adapt with the business.

This brings us to the original justification of hardware downsizing—or if you prefer, “rightsizing.” The meaning behind these concepts boils down to the strategic migration from older mainframe architectures onto distributed (and preferably open) platforms that provide a stronger foundation and growth

By David J. Rubinstein



path for the future. The added benefits of this migration are cost reduction (in many cases as much as 20 to 60 percent), cost containment, increased functionality and numerous intangibles.

### Best Of The Buzzwords

IN ENVISIONING THE '90s, *Business Week* identified downsizing as one of the key buzzwords of the decade. For the business community, downsizing has taken on the broad definition of revamping an organization's structure. In MIS terms, it is commonly interpreted as "shooting the mainframe." More accurately speaking, new technology has presented us with opportunities to rightsize information systems.

Let's not confuse the issue — we're not talking about scrapping the mainframe and replacing it with a PC LAN. That's simply not a realistic prospect. Hundreds, if not thousands, of person-years have been invested into mainframe system development and operation. However, in many situations, such as end-user reporting, it's clearly advantageous to offload applications from the mainframe onto a midrange system.

Information processing is moving back to where it originated: the desktop, the department and the regional office.

In the past, many businesses have restructured in order to accommodate their computer systems. For some companies, this added measure of structure was welcome. For others, computer systems represented a necessary evil. Jobs, departments and information flow were changed and readjusted in order to provide the most effective use of the computer system. The flexibility of today's computing environments offers organizations a chance to turn the tables. Businesses now can re-engineer themselves without giving first consideration to the computer system.

### Cost-Conscious Computing

AMONG THE MANY CONSIDERATIONS that come into play when downsizing is discussed, money ranks as the top issue. And, in computing terms, money matters boil down to price/performance. The processing power found in many of today's midrange computers (such as the HP 3000 Series 990) is equal to and in many instances greater than many IBM mainframe models. Not only has the price/performance been improved dramatically, but the cost of operating and maintaining the systems also has decreased.

PA-RISC is one of the best examples of why operating costs have decreased. PA-RISC puts the mainframe-class processing power on a single chip, while the IBM mainframe has hundreds of chips performing the same functions. The simpler the design of a computer, the easier it is to maintain the hardware. This translates into lower support costs.

Also, mainframes require special environmental controls, such as water- or air-cooled equipment. There are on-going costs associated with maintaining this environment such as greater

Downsizing has taken on the broad definition of revamping an organization's structure.

In MIS terms, it is commonly interpreted as "shooting the mainframe."

power consumption, floor space and additional equipment maintenance requirements. All of these factors add up to considerably higher operating costs when compared to midrange systems and servers.

The hardware alone costs 30 to 60 percent more to operate in the IBM mainframe environment than, an HP system. Even IBM's midrange AS/400 costs considerably more to own and operate than a comparable HP 3000. And the RS/6000, despite price cuts, is still more expensive than the HP 9000.

Mainframe software costs make the economic argument for downsizing even more compelling. For example, the software licence fee for a 4GL tool can cost half as much on the HP system as on a mainframe. This cost ratio also can be translated to the software support costs. This provides more evidence in favor of rightsizing in a cost benefit analysis.

The cost justification of an HP system versus is the IBM mainframe is overwhelming. Studies show that by replacing the mainframe with HP 3000s or 9000s where appropriate, the business can realize a payback in less than three years. The economic justification is overwhelming, but it's also important to examine other factors when making the downsizing decision.

### New Standard Bearers

RECENT ADVANCES IN system standards (i.e., open systems or a standard within a product line such as MPE with integrated POSIX-compliance) provide businesses with more flexibility when choosing hardware, software and development tools. Standards have brought us many new and enhanced capabilities, all of which help lower operating and development costs, as well as increase productivity.

With standards-based hardware and software, the size of a system can be configured to match the organization it's



supporting. This is called scalability. The idea of scalability and portability is extended into the development environment.

Many of today's development tools can be used on PCs, allowing a developer to be more productive. A developer no longer has to wait for a program to compile because the compile stream is competing against the production system. Many MIS departments are purchasing low-end systems for development. The software then can be ported to the production systems.

This strategy provides a dedicated development environment whose test environment can mimic the production environment. Also, by being on a low-end CPU, the development licence and support costs are less than on a larger CPU.

Development tools also have become more flexible and powerful. Under a NewWave or Windows environment, multitasking can be introduced into the development process. A programmer can execute a program in one window, use a debugger in a second window, while reviewing the source code in a third. And, all of this is being performed on a dedicated CPU. Studies show that the improved development tools along with a dedicated processor have increased development productivity by about 30 percent. Productivity increases extend beyond development as well. The implementation of client-server architectures has had a great impact on the way business is conducted by placing computing power closer to the user.

Training also is receiving a boost from today's standards. Graphical user interfaces (GUIs) make systems simpler to use. You no longer have to type in commands or navigate through cumbersome menu trees. GUIs allow you to relate to graphical objects. And, by concentrating on objects, it's easier to learn and retain system knowledge.

The result of these benefits is a more competitive business. Downsized systems eliminate unnecessary costs, allowing the business to invest more resources in development or direct more

money to the bottom line (a favorite of many stockholders). Downsized systems can place the resources at the appropriate level within the organization, thereby allocating more computing power at less cost to those who need it. Systems can be developed more proactively and productively, allowing the users to become more proactive and productive in their functions. This has a ripple effect on the organization as a whole — making the company more profitable, productive and competitive.

## Bucks, Guts And People

**D**OWNSIZING ISN'T A simple process. There are many challenges that lie ahead — technical, functional and people problems. The process is more involved than a simple one-for-one exchange and will likely require moving to more than one system. Remember, we're moving the processing to where the work is done — going from centralized to decentralized processing. This may mean putting a lead tracking system into regional sales offices and a warehouse/inventory system in each distribution center. The impact of such fundamental changes will be felt by users at all levels.

In the first phase of the re-engineering process, we look to the beginning of the systems development life cycle. We term this "information planning." This is the segment where the vision of future computing is defined and established. Business concerns are analyzed. What operational advantages can be established to maximize competitive advantage? How can you lower your cost structure? How can functionality be improved?

The downsizing process provides the opportunity to answer such questions. Moving from the centralized mainframe environment provides the opportunity to mold information systems into a framework that truly can support the future growth with a flexible, powerful architecture. This is the time to build that strong base — this is where management commitment is vital.

## RIGHTSIZING AND RE-ENGINEERING: FIRST ASK THE TOUGH QUESTIONS

Downsizing and re-engineering are not for everyone. There are many questions that should be asked before jumping into this process. Downsizing is a major commitment full of challenges and changes. Here are a few items you may want to examine:

- Compare your support costs for hardware and software against those of a comparable midrange computer.
- Compare your software license fees against those of a comparable midrange computer.
- Compare the percentage of your programming staff dedicated to maintenance of current systems to maintenance expected for off-the-shelf software.
- Compare the cost per mips.

Questions you should ask yourself include:

- What is the cost of maintaining your current computer facility, including power usage, cooling units and cost per square foot?
- Is there a need to expand the physical facility?
- How large is your development backlog and how productive is your current development backlog?
- Does compiling programs compete with production resources?
- Are your systems mainly batch?
- Would the business benefit from better functionality and improved response time?
- Do users constantly request data that creates more backlog for MIS? Could this data be more readily available in a client-server or desktop environment?



The economic argument for or against downsizing is easy to prove. The next step is to embark on the actual process. It isn't simple, but the rewards are tremendous.

Management commitment can be gained in many ways. One tool that we use often is the cost benefit analysis (CBA). As mentioned earlier, the economic arguments for downsizing are quite strong and the CBA is a powerful tool to get management signed on. In order to execute the downsizing plan, a budget will need to be allocated. It boils down to spending money to make money, and the CBA should bear this out. One of the best comments I've heard about the downsizing process was, "It takes bucks, guts and people."

The people issues are perhaps the greatest barrier to a successful downsizing project. Technical issues also pose some hurdles, but these are easier to overcome. From our experiences, we find the MIS staff the most resistant to change. They don't want to learn and operate in the new environment. After all, change represents the unknown, and fear of the unknown

is basic to human nature. And in recessionary times, job security is on everybody's mind. Contrary to popular belief, however, downsizing doesn't have to mean staff reductions in MIS.

The economic argument for or against downsizing is easy to prove. The next step is to embark on the actual process. It isn't simple (is anything in information systems?) but the rewards are tremendous. Now that American business has entered the era of downsizing and fine tuning their operations, MIS has the opportunity to set the tone and lead the charge. — *David J. Rubinstein is co-founder and vice president with Innovative Information Systems Inc., a Norwood, MA-based Systems Integrator and HP Mainframe Alternative partner.*

Would you like to continue to see articles on this topic?  
Circle on reader card  
yes 340 no 339

## THE TOTAL SOLUTION

*sales, service, support*

On-time service, on-line equipment—backed by the GE name.

Black River takes the risk and worry out of ordering, implementation and maintenance. You're assured:

- Full line of new and previously owned, refurbished 9000, 3000 and 1000.
  - Technically trained maintenance team.
  - Free installation with GE maintenance package.
  - Nationwide service backed by GE.
- Call 216-365-9950 or fax 216-365-3916 for more information.



GE Computer Service

**BLACK RIVER**  
COMPUTERS

THE TOTAL SOLUTION  
*sales, service, support*

7630 RACE ROAD • NORTH RIDGEVILLE, OHIO 44039  
216-365-9950

CIRCLE 171 ON READER CARD

## EDI, ATMs, POS, RJE?

## GET CONNECTED!

- RJE (2780/3780) for EDI Communications
- 3270 Device Polling for ATMs & POS
- IBM Bisync Communications

The Synchronous Network Engine is a general purpose bisynchronous communications product for use in the MPE and UNIX environments. It is used to perform file transfers in conjunction with most popular EDI applications on all major Value Added Networks as well as in applications accessing POS terminals, ATMs and credit card authorization services.

The Engine connects to ATP/DTC/MUX ports on HP 3000 or HP 9000 systems and supports a variety of synchronous modems and auto-dialers. No other HP hardware or software is required.



**TELAMON**

(800) 622-0630 • (916) 622-0630 • (916) 622-0738 FAX  
492 Ninth Street, Suite 310 • Oakland, CA 94607-4098

CIRCLE 234 ON READER CARD



# BYE, BYE BUREAUCRACY

---

Financial EDI Combines Payments  
With Paperwork To Save Your Business  
Time And Money

**BY** DR. TREVOR RICHARDS

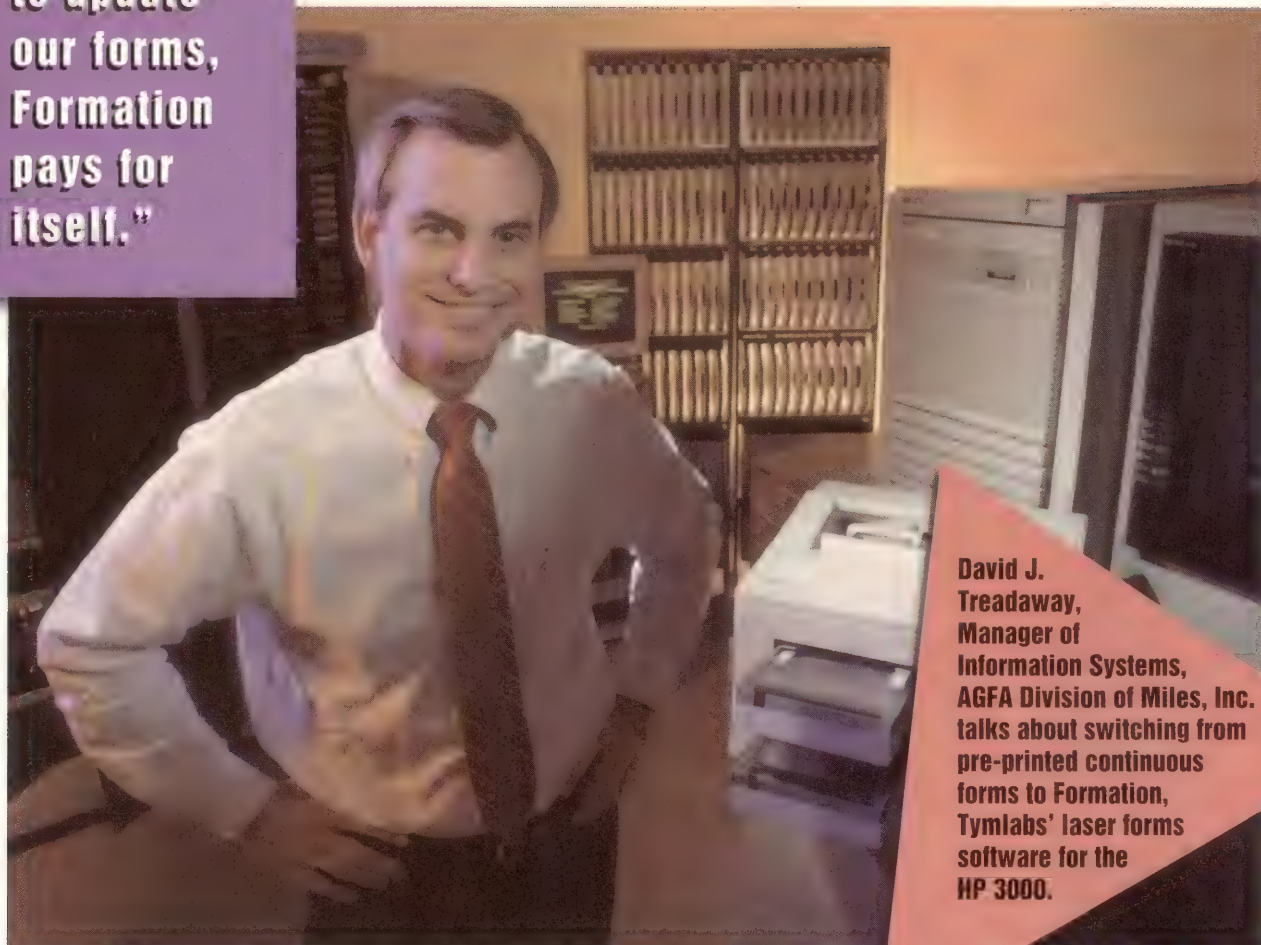
Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT) are drawing a lot of attention lately. They also are creating a lot of confusion as to which is which and which does what. EFT is the electronic alternative to checks; EDI is the electronic alternative to purchase orders and receipts. While the primary purpose of EDI is to move *information* electronically between business partners, the primary function of EFT is to move *money* electronically between companies and banks.

If both the transfer of funds and the transfer of remittance details are to be conducted electronically, both EFT and EDI must be employed. The marriage of EDI and EFT has been dubbed *financial EDI* (see *Figure 1*).

EFT payments can be made two ways: by wire transfer or through an Automated Clearing House (ACH). Wire transfer is an on-line, real-time payment system primarily designed to



**"Every time  
we have  
to update  
our forms,  
Formation  
pays for  
itself."**



**David J.  
Treadaway,  
Manager of  
Information Systems,  
AGFA Division of Miles, Inc.  
talks about switching from  
pre-printed continuous  
forms to Formation,  
Tymlabs' laser forms  
software for the  
HP 3000.**

*"As an ASK MANMAN shop, we use lots of pre-printed forms. Because we have to update our forms regularly, we were looking for an alternative to the old-fashioned approach of just throwing out the old forms and buying new ones.*

*"We found that we could install Formation without a single modification to our ASK software, using the laser forms Tymlabs supplied. These laser-printed forms matched our pre-printed ones perfectly. All we had to do was add our logo and put our terms and conditions on the back.*

*"It was no problem for us to cost-justify Formation. When we realized that Formation would cost less than a six-month supply of forms, we stopped right there. In fact, the savings have doubled or tripled since then, because on two occasions we have had to modify all our forms.*

*"First our company went through a name change. Then, a few months later, we had to add our tax ID number to all our forms. If we'd still been using pre-printed forms, we would have had to replace our entire forms inventory twice. With Formation, a programmer updated all our forms in about an hour."*

*Call us today at  
**1-800-767-0611** to  
find out how easy  
it is to save on your  
forms budget using  
Formation, the complete  
laser printing solution  
from Tymlabs.*

**Tymlabs®**

Tymlabs Corporation  
811 Barton Springs Road  
Austin, Texas 78704 USA  
(512) 478-0611  
Fax (512) 479-0735

Tymlabs (UK) Ltd.  
Munro House, 9 Trafalgar Way  
Bar Hill, Cambridge, UK CB3 8SQ  
0954-780088  
Fax 0954-780001

CIRCLE 139 ON READER CARD



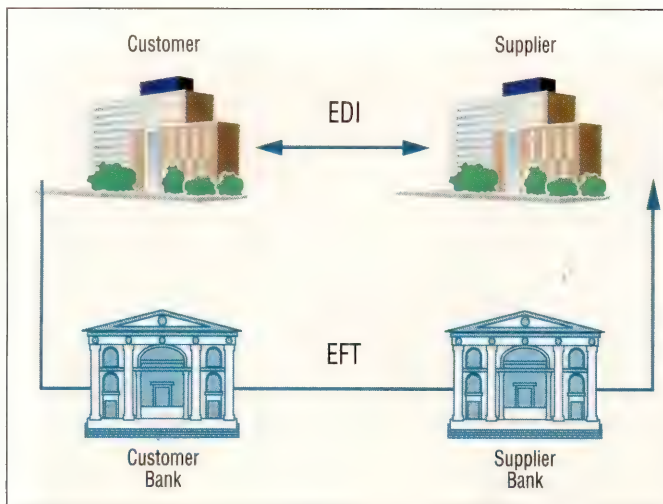


Figure 1: EDI and EFT: Partners or Adversaries?

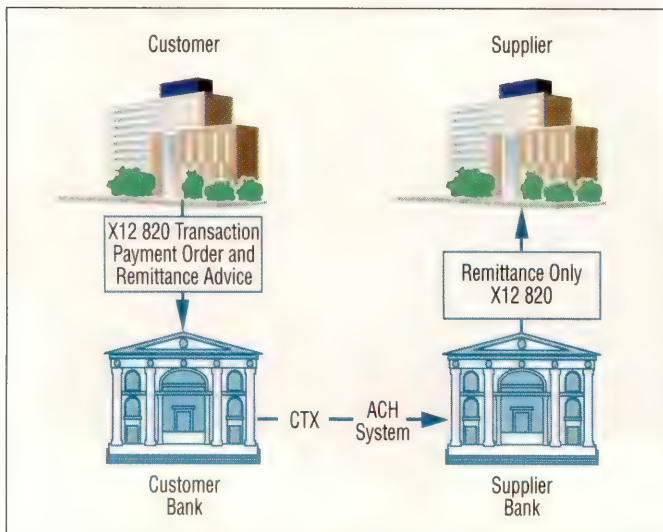


Figure 2: Supplier's bank delivers remittance data (820).

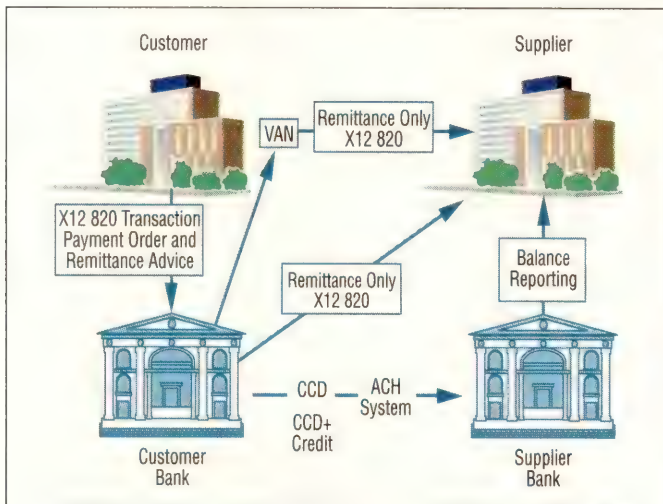


Figure 3: Customer's bank delivers remittance data (820).

handle large-dollar, time-critical payments, mostly between big banks. It moves funds and a limited amount of associated information. ACH, on the other hand, is a next-day funds settlement system, which can be thought of as an "electronic check." Because ACH also can move both funds and associated information, it has become recognized as the most appropriate payment mechanism for financial EDI.

Initially, the ACH system was used for the sole purpose of funds transfer, but in 1982, the National Automated Clearing House Association (NACHA) sponsored a study that helped corporations to define new formats for funds transfer that incorporated both payments and remittance information.

To support financial EDI and corporate cash management needs, NACHA designed four basic corporate trade payment formats: Cash Concentration and Disbursement (CCD), Cash Concentration and Disbursement Plus (CCD+), Corporate Trade Payments (CTP) and Corporate Trade Exchange (CTX). Both CCD and CCD+ are used primarily for funds transfer because they offer little additional information to be carried with the payment information.

The CTP format satisfied the need to concurrently move both funds and detailed remittance information through the ACH. Both the payment information and the additional free-form invoice data are held in a predefined, fixed-field format. But this format was later superseded by the more-flexible CTX format, which also permits both payment and remittance detail to move together through the ACH system.

The main feature of CTX is that it lets you encapsulate the entire ANSI X12 payment order/remittance advice transaction set (820)—the EDI equivalent of the envelope. The 820 transaction set can contain the payment information and/or the detailed remittance information related to the payment.

## Delivery VANs

FOR THE TYPICAL EXCHANGE of data via EDI, the customer and supplier often will use a Value-Added Network (VAN) to provide a store and forward mailbox service for the data transfer. In financial EDI, the obvious place to look for such a service for the transfer of payment and remittance details is the ACH system. Figure 2 shows how the transaction would work if both the customer's bank and the supplier's bank participated in the ACH system and the customer's bank could accept the ANSI X12 payment order/remittance advice transaction set (820).

First, the customer transmits the ANSI X12 820 transaction set to his bank, which in turn reformats the payment and remittance information into the NACHA CTX format. Then the CTX transaction is processed through the ACH system and received by the supplier's bank. The supplier's bank then extracts the remittance details and makes this information available to the supplier in the form of the ANSI X12 820 transaction set.



## ELECTRONIC PAYMENT STRATEGIES: THE CHECK IS ON THE WIRE

On any given day, the value of funds moved electronically in the United States is measured in trillions of dollars. (Remember Ronald Reagan's analogy of stacking \$20 bills from here to the moon?) While a good portion of these funds transfers are consumer-oriented (direct-deposit payroll, installment loan payments, mortgage payments, etc.), the hottest growth area for EFT is business-to-business trade payables.

Business-to-business payments represent a more significant challenge for EFT than do consumer transfers because significant amounts of business-specific information must accompany the payment. In order to streamline administrative functions (and make electronic payment worthwhile), organizations frequently combine EDI and EFT.

But today's businesses also have several other motivations for using financial EDI:

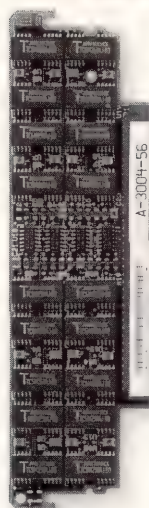
- Technology and standards are in place. Software, communications and banks with EDI/EFT processing capabilities now are readily available. The economic benefits continue to outpace costs.
- Businesses can close the administrative loop and reduce the time and costs associated with doing business. More than 50,000

organizations worldwide have been using EDI for buying, selling, distributing, invoicing and many other administrative functions. Paying electronically takes full advantage of the final phase in a business transaction cycle.

■ Governments and public agencies use it. The Federal government has adopted financial EDI as a key capability for the IRS, U.S. Customs, Medicare, GSA, DoD and other areas. Some state governments are also active. Many more will mandate the use of EDI to lower their operational costs, control cash flow and avoid the need to maintain a redundant paper-based system.

■ There are competitive advantages and cost savings. Organizations are realizing that the practice of "float management" adds no real value to their business processes. In fact, it ends up costing money to maintain open payment cycles. Many companies are sharing the benefits of financial EDI with their trading partners through increased cash discounts, thereby helping their suppliers to become more price-competitive. — Jeff Kessler is a founding member of EDI Partners, Ltd., Minneapolis, MN.

## The only significant difference.



HP/Apollo  
Memory



Martech  
Megamemories

SAVE  
34%  
TO  
73%

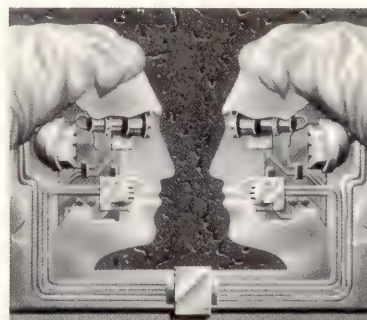


Megamemories™ are 100% HP/Apollo compatible. They're made from high-quality components, backed by a lifetime warranty, and even come with a 90-day money-back guarantee. If you're ready to save thousands on memory, call or write: Martech, 1151 W. Valley Blvd., Alhambra, CA 91803-2493. Telephone: (800) 582-3555 or (818) 281-3555. FAX: (818) 284-3092.

HP and Apollo are registered trademarks of Hewlett-Packard.



CIRCLE 220 ON READER CARD



## Bringing Business Face to Face

Since 1973, the Perwill Group has been providing high quality software and services to users throughout the world. By providing the most powerful EDI translation software available, Perwill EDI allows you the flexibility to perform EDI with all your trading partners - **Worldwide!** In addition, we offer a compatible software upgrade path from PC to HP3000 or UNIX platforms, thus providing the security of knowing you are purchasing software that will facilitate future business growth!

Operating Environments For: Sun UNIX, Apollo, HP3000, HP9000, RS6000, UNIX & PC's

# PERWILL EDI

6133 Rockside Road • Independence, Ohio 44131  
Toll Free: 1-800-969-3341  
Outside U.S. and Canada: (216) 642-7565

CIRCLE 479 ON READER CARD



If the supplier's bank can't process the CTX transaction, the remittance information is forwarded to the supplier, either directly through the customer's bank or indirectly via a VAN (see Figure 3). In this scenario, funds are transferred using either the CCD or CCD+ transaction, and remittance information is transmitted to the supplier in the form of the ANSI X12 820 transaction set.

### All The Way To The Bank

**T**RANSFER OF PAYMENT AND remittance information also can be accomplished in other ways. For example, VANs offer extended services to translate ANSI X12 820 transaction sets into various NACHA transactions, which can offer alternative scenarios.

However, I believe most corporations that implement financial EDI will feel comfortable with one of the two scenarios outlined above. These methods offer the most control over transferred funds and minimize the transfer of financial data through third parties. But, they also rely on the customer's financial institution to provide services above and beyond what banks typically offer. And at present, this may be the biggest

hurdle financial EDI faces. The term "Value Added Bank" is now being used to describe banks that enable their customers to implement financial EDI.

Many larger banks have added services that let their customers reap the full benefits of EFT and EDI — that is, to transfer funds and remittance details together through the ACH system. However, because many other banks are unable or unwilling to offer such services, several alternative scenarios are being used. Unfortunately, these other methods only serve to confuse prospective participants and delay their entry into the world of financial EDI.

Nevertheless, great benefits accrue to both customer and supplier when EFT and EDI concurrently transfer funds and remittance information. The customer gains control over his cash flow and reduces his payment processing costs. The supplier eliminates the extra expenses associated with paper-based checking, and the automated posting of remittance information removes errors associated with manual data entry. — *Dr. Trevor Richards is an EDI specialist with M.B. Foster Associates, a supplier of EDI products and services.*

Would you like to continue to see articles on this topic?

Circle on reader card  
yes 350 no 349

## RT Series Upgrades

For HP Vectra ES and QS PC's



The RT386DX-4 is a user-installable motherboard replacement designed specifically for the HP Vectra ES, ES/12 and QS models. The processor is a 40 MHz Am386DXL-40 with 64K cache. Keyboard connectors, power connections and the shape of the upgrade board are identical to the Vectra motherboard being replaced. The board supports up to 32 MB of RAM using 1, 2, or 4MB 70ns SIMMs. Pricing starts at \$899.00 plus memory. Call today for more information.

**MORE SPEED** - Up to 8 times faster  
**MORE APPLICATIONS** work better, faster  
**MORE USEFUL LIFE** for your Vectra  
**FOR LESS MONEY** than buying new equipment

**OREGON DIGITAL**  
COMPUTER PRODUCTS, INC.  
885 NW GRANT AVE., CORVALLIS, OR 97330

Call for more information  
**1-800-854-5678**

FAX: (503) 758-8451

All brand and product names are trademarks or registered trademarks of their respective companies.

CIRCLE 489 ON READER CARD

## CUSTOM KEYS for Hewlett-Packard

Full range of legends & key colors

**Custom Keytop Labels  
Keyboard Templates & more!**

A total line of keyboard enhancements

Call for **FREE CATALOG!**  
Toll free **800 937-1337**



**Hoooleon**  
CORPORATION

The Leader in Keyboard Innovations

P.O. Box 230 • Dept. HPRQ • Cornville, AZ 86325

CIRCLE 474 ON READER CARD



# HP-UX UNIX® MPE/iX CLIENT/ SERVER

All of them.

After all, we're HP experts. For more than 16 years, we've been designing our World Class Series Accounting, Payroll and Human Resource systems to support all of HP's commercial platforms.

If your company is using more than one operating system, that should be especially good news.

We cut our teeth on Classic. Then introduced the first accounting and human resource package for HP's RISC-based architecture in native mode under MPE/XL.

Which is the best  
HP platform for Collier-Jackson's  
World Class Series™ software?

Today, our software is completely portable across HP-UX and MPE/iX operating systems, and available on client/server architecture.

That means you can begin enjoying the advantages of open computing today. Not tomorrow.

There are other advantages, too. For instance, we give you the ability to use powerful user interfaces like Microsoft Windows and OSF/Motif. And your employees will only need to learn our applications once.

So, if you're looking for a total accounting, payroll and human resource solution for your company, talk to the vendor that understands your HP hardware. Inside and out.

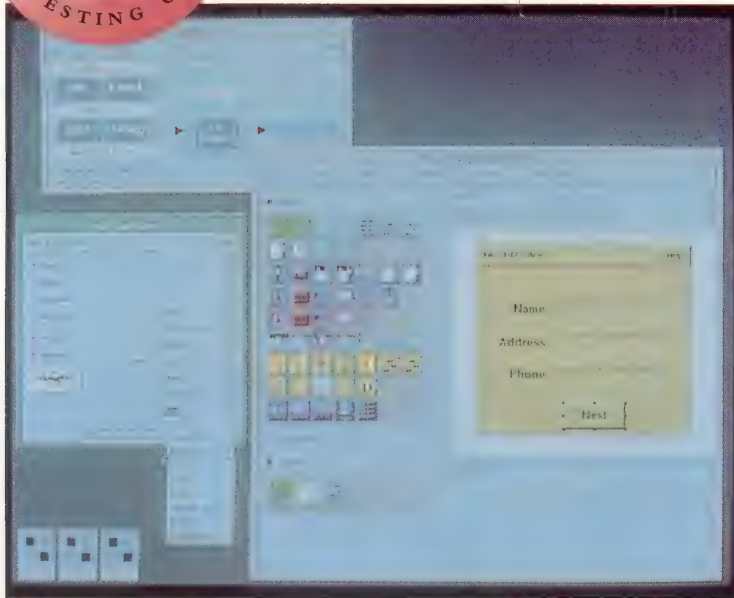
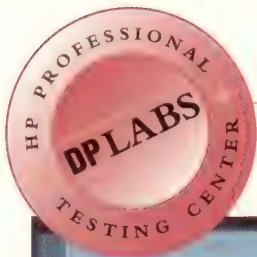
To find out more about Collier-Jackson's World Class Series software, call 813-872-9990 today.

**CompuServe**  
Collier-Jackson

CIRCLE 111 ON READER CARD

World Class Series is a trademark of CompuServe/Collier-Jackson. All other product names mentioned herein are for identification purposes only and may be trademarks and/or registered trademarks of their respective companies.





# SOPHISTICATED GUIs

## TeleUSE 2.0.5

### OBSERVATIONS:

- Full-fledged UIMS, not just an interactive design tool.
- Allows quicker building of GUIs over do-it-yourself programming in C.
- Supports standard OSF/Motif as well as customized widget sets.
- Dialog scripting language allows independent development of application code and visual GUI interface.
- All code can be converted to C /UIL for easy portability.
- Interpreted code and a debugger simplify the development process.

### PLATFORMS:

HP 9000/400 and HP 9000/700 and a host of other UNIX-based systems.

### PRICE:

\$7,500 for all platforms.

### Telesoft

5959 Cornerstone Court West  
San Diego, CA 92121  
(619)457-2700  
(619)452-1334 (fax)

CIRCLE 306 ON READER CARD

## TeleSoft's TeleUSE UIMS Lets You Build High-Class GUIs Faster And Easier

As computer interfaces move steadily from the text-based to the graphical, programmers find themselves involved in building increasingly sophisticated GUIs for their applications. However, the process of building a good GUI front-end is not easy. Relying only on the basic tools, such as Xlib, the Xt Intrinsics and C, can make GUI programming a time-consuming, tedious, if not arduous, effort.

The search for a solution to the GUI building problem has spawned a new class of programming tools: GUI builders and User Interface Management Systems. TeleUSE, from TeleSoft (San Diego, CA), is one such tool. TeleUSE's various components take the struggle out of building GUIs for your applications, and this allows you to concentrate on the bigger picture rather than on all the details of programming in "straight" X. We ran TeleUSE 2.0.5 on our HP 9000/425t running HP-UX version 8.0.

Building a GUI involves using TeleUSE's four major tools: the Visual Interactive Programming (VIP) layout editor, the D (a C-like scripting language) Dialog Manager, the Runtime Library and the UI Builder. You'll spend most of your time using the VIP and D to get your GUI built, tested and running.

The VIP WYSIWYG editing tool separates the graphical design of your GUI from the rest of your application.

DAVID B. MILLER



# Why not the best?



**HP 1000,  
HP 3000, &  
HP 9000  
150 Megabyte  
& 2 Gigabyte  
Streaming Tapes**  
Unattended backup  
of all your data on a  
single ultra-compact  
cartridge.  
Media translation &  
SSS update service  
available

## Also available:

### **HP 1000 Memory Expansion**

Improves system performance. Free evaluation.  
512 KB to 32 MB expandable cards. 2 year warranty

### **High Performance SCSI Interfaces for HP 1000, HP 3000, & HP 9000**

Superior to IEEE-488. Used with all Herstal  
Automation peripherals

### **HP 1000 & HP 9000 Disc Drives**

65 MB to 638 MB. 30,000 hour MTBF.  
Up to 7 drives per interface

### **HP 1000 & HP 9000 Optical Discs**

1 Gigabyte Erasable and "Write Once". Ideal for  
information retrieval and archival data storage

### **Ramdisc/1000** Speeds up file access

### **Superclock/1000** Automatic time & date



*"I promise you —  
no service hassles, no  
matter who is servicing  
your HP system."*

Rick Walsh  
President



## HERSTAL

**AUTOMATION LTD.**

3171 West Twelve Mile Road  
Berkley, Michigan, USA 48072

Telex 650-321-1560

FAX 313-548-2010

Phone 313-548-2001



User interfaces are developed by building VIP modules. Modules, in turn, are composed of widget templates, which are composed of other templates and widgets. Thus, the activity of building a GUI with VIP involves developing modules that are built from a hierarchy of widgets and templates.

Widgets used to build templates are grouped into TeleUSE modules and are selected from the standard OSF/Motif or TeleUSE-specific widget sets. The full Motif widget module includes all of the widgets with default attributes set according to OSF/Motif specifications. An OSF/Motif Style Guide-specific widget module is also available. Also, you can create your own custom modules of Motif widgets.

TeleUSE's large work area displays the graphical content of the widgets selected for your application. From within VIP and the work area, all widget attributes and behavior can be customized from a pop-up Attribute Window. Many attributes are set with a click of the mouse. None of these items require direct coding. Callbacks to your application or to TeleUSE's own Dialog Manager D code are defined here as well.

As your application grows, VIP's work area may not be large enough to let you see the entire widget hierarchy. VIP's Tree Editor can be used to get a fix on the location of and relationships between the widgets and templates comprising your application. The Tree Editor provides the same function as the work area, but it also displays the entire GUI layout in one window.

## Can We Talk?

The D scripting language is used to write the dialog that interfaces the presentation portion of your GUI and your underlying application, written in C. The Dialog Manager (DM) code effectively separates your application from the GUI, resulting in a cleaner design that is easier to write and maintain, even when several programmers are involved. D modules are written in a non-procedural, rule-based manner. D code is similar to C, so C programmers should not have

**TeleUSE's various components take the struggle out of building GUIs for your applications, and this allows you to concentrate on the bigger picture rather than on all the details of programming in "straight" X.**

trouble adapting to its data types, syntax and structure.

A D script intercepts events generated from interaction with the static portion of your GUI, from other portions of the D code or from signals received from your application. Events can be set up for immediate execution, for execution after a time delay, or they can be queued and handled on a first-come, first-served basis. The handling of events means that rules contained in the D script are executed. Results from handling these events could trigger action at the visible presentation level or at the lower application level.

To begin, TeleUSE can generate a skeleton D code routine that examines the static presentation portion of the GUI you created. A stub is generated for

each callback you specified in each widget's attributes window. After the stubs are generated, you simply fill in the rules required for each callback. After the basic rules are written, you can expand the Dialog Manager code to handle other events.

A D routine can communicate with other D modules, with application code written in C, C++ and other languages, with Xlib and other lower level X Window System routines and even with the presentation component of your GUI through the TeleUSE runtime library.

D to C mapping is executed with Application Interface Map (AIM) files. AIM files resolve such issues as data type mapping between your application written in C and your dialog code. An initial AIM file is generated when you

## PUTTIN' ON THE RITZ: TELEUSE VERSION 2.10

Several new features make TeleUSE version 2.1 even easier to use than the version we tested. A Dialog Manager script editor has been added to allow creation and editing of D code from within TeleUSE. D events and callbacks can be automatically inserted into the D code. Other Dialog Manager improvements include better variable and type definition support.

A new Builder Tool lets you specify the final configuration and generates the final product without forcing you to deal with makefiles. The Node Search Tool lets you find nodes in the tree hierarchy — a handy tool for large projects.

Other features include a Form Constraints Editor, better handling of widget attribute selection and an enhanced Color Pixmap Editor.

Wrapped around TeleUSE is a new Session Manager that provides easy access to all TeleUSE functions as well as to third-party products.

Regarding code generation and formats, TeleUSE can now import UIL code generated from third-party products such as ICS's Builder Xcessory(tm). C++ calls can be made directly from the Dialog Manager code. Multiple C files can be generated from the presentation layer, speeding up the code building process.

Third-party tools, CenterLine's ObjectCenter C++ Development Environment and Pure Software's Purify, now are integrated with TeleUSE, providing for faster development of error-free applications.



build your application as described below. Also, AIM files are supplied by TeleUSE to map your D code to the TeleUSE runtime library and to the X Window System toolkit.

The D code debugger is particularly useful. The debugger can be invoked while an application is running, or an application can be started directly from the debugger.

When you attach an application to the debugger, the code is displayed in the debugger window along with other information such as D events that could be encountered and the breakpoints that are currently set. Commonly used debugger commands are available as pushbuttons. Other debugger commands are available from pull-down menus or from the command line.

### Custom Builder

A complete executable is built with the UI Builder. You don't have to worry about writing your own makefiles and the like. A simpler configuration file is all you need to generate UI Builder output. In fact, with the command **uxb guess**, the UI Builder will generate a best-try configuration file for you.

UI Builder accepts D and C source files, GUI description files generated by the VIP design edition (known as Presentation Component Descriptions, or PCD files) and other components such as object libraries. It generates several output files in selected formats including C and UIL.

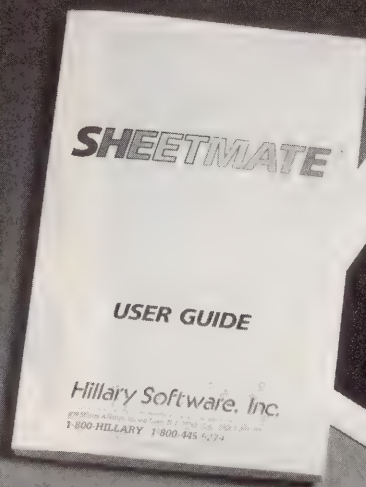
TeleUSE also provides a robust runtime library to complement the D language. Routines are included to handle widgets, X and D events. Convenience functions are included to interface to Xlib and to the Xt intrinsics. Many runtime library functions can be called directly from C.

Given that all the world is going graphical and given the difficulties of programming directly with the basic X Window facilities, it makes sense to invest in an interface design tool or UIMS such as TeleSoft. ■

"Sheetmate is the most important HP3000 software purchase we've made this year."

Bob Meissner, Director,  
Information Systems Welding Engineers, Blue Bell, PA

## SHEETMATE instantly changes any HP3000 information into LOTUS, dBase or WordPerfect.



SHEETMATE loads itself onto your HP3000\*. In minutes you'll produce LOTUS spread sheets, dBase or WordPerfect files directly from any HP3000 MPE file or SPOOL file (printed report). Request your **FREE** Sheetmate evaluation by phone, fax or return mail. Sheetmate demos are shipped and supported worldwide.

**Hillary Software, Inc.**

309 Morris Avenue, Spring Lake, N.J. 07762 FAX 1-908-974-0167  
1-800-HILLARY 1-800-445-5279 908-974-8484

© SHEETMATE™ is a product of Intellisoft, Inc.

CIRCLE 486 ON READER CARD

# Buy, Rent,

*For HP 1000, 3000, and 9000 systems and*

# Lease, or

*peripherals, HP compatible equipment and*

# Sell HP.

*accessories at competitive prices, call*

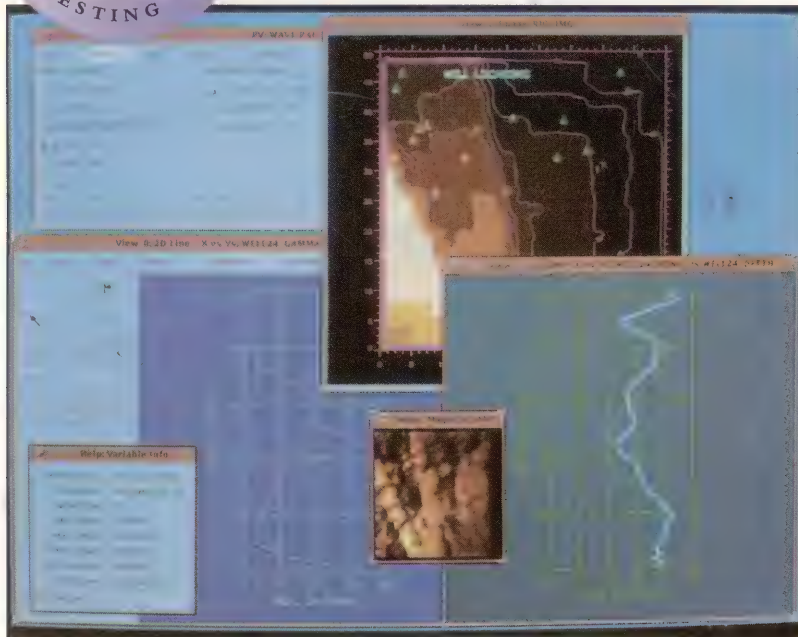
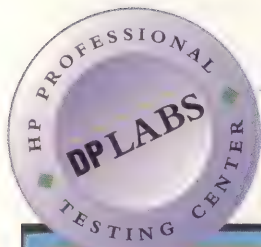
**Computech**  
Systems Corporation

800-882-0201 USA, or 206-820-6500

11421 NE 120th Street, Kirkland, Washington 98034 FAX: 206/820-6565

CIRCLE 101 ON READER CARD





# GET THE POINT — AND CLICK

## PV-Wave Point & Click V1.500

### OBSERVATIONS:

- Allows quick production of graphs and images from complex data.
- Motif interface eliminates need to memorize or reference command line syntax.
- Combines analytical aspects of a mainframe graphics manipulation tool with the features of a dedicated image processing system.
- Displays 2-D and 3-D graphics, supports animation for data flow visualization.

### PLATFORMS:

HP, DEC and Sun workstations

### PRICE:

\$4,500 for a single-node license

### Precision Visuals Inc.

6230 Lookout Rd.  
Boulder, CO 80301  
(303) 530-9000  
(303) 530-9329 fax

CIRCLE 307 ON READER CARD

## Precision Visuals' PV-Wave Interactive Data Analysis Tool Discovers Hidden Trends And Patterns In Raw Data

**P**recision Visuals' PV-Wave Point & Click visual data analysis software is leading-edge technology for the interactive viewing and analysis of complex scientific and engineering data. PV-Wave Point & Click is a Motif application that can run on the HP 9000 Series 700 workstations, as well as DEC and Sun Microsystems workstations. The Point & Click version retains all of the functionality of PV-Wave command line versions.

Visual data analysis software is used primarily for the visualization and analysis of technical data. The PV-Wave series is useful for quickly producing graphs and images from complex data. Visual representation of data is crucial to engineers and scientists, who must be able to quickly and easily analyze and reduce data to find patterns not easily seen in tabular form. PV-Wave allows technical users to display 2- or 3-D graphs, animate sequences of data or manipulate data using complex mathematical functions.

Installation is simple and standard across all supported platforms. You first create a home directory using the suggested default:

```
/usr/local/pvi
```

TONY FIORITO





**TELNET**

**CONNECTION TO UNIX**

PASSENGER NAME: YVONNE HEFLIN

X/O FROM: SEATTLE/TACOMA INT'L

X/O TO: CONNECTIVITY CITY

CLASS: FIRST CLASS

DATE: 6-1-92

TIME: 10:00 A.M.

STATUS: POSITIVE SPACE

CARRIER: WALKER RICHER & QUINN, INC.

COUPON NO: 4132

TOUR CODE: 980756

**NS/VT**

**CONNECTION TO HP 3000**

PASSENGER NAME: YVONNE HEFLIN

X/O FROM: SEATTLE/TACOMA INT'L

X/O TO: CONNECTIVITY CITY

CLASS: FIRST CLASS

DATE: 6-1-92

TIME: 10:00 A.M.

STATUS: POSITIVE SPACE

CARRIER: WALKER RICHER & QUINN, INC.

COUPON NO:

**LAT**

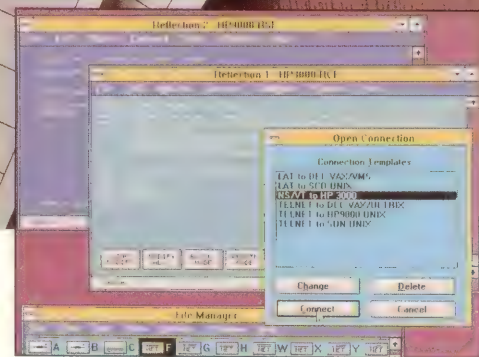
**CONNECTION TO VAX**

PASSENGER NAME: YVONNE HEFLIN

X/O FROM: SEATTLE/TACOMA INT'L

X/O TO: CONNECTIVITY CITY

CLASS: FIRST CLASS



# Connections you can count on— Reflection Network Series®

- Concurrent connections to HP 3000s, HP 9000s, other UNIX, VAX/VMS, and IBM hosts along with popular LANs
- Now with version 2.0:  
Token-Ring and NetBIOS support  
Lower memory requirements
- NS/VT and Telnet Connections for the Macintosh

**Call 1-800-92NETWORK  
today!**



CIRCLE 145 ON READER CARD



After setting the default to that directory, the files are copied from the delivery tape. An installation script, **wvpt\_install**, is provided to do the rest of the initial work. A softkey is entered to activate PV-Wave before it can be used. Precision Visuals provides its own license manager, as well as a manual that explains how to use it.

### Motif Bells And Whistles

Because the software is a Motif application, I was able to get started quickly. The Motif approach eliminates the need to memorize or constantly look up complex command line syntax. PV-Wave Point & Click delivers all the benefits of a GUI and uses all the tools available under Motif: pull-down menus, icons, push buttons, scroll bars and sliders. I could select choices from menus and lists and point and click with my mouse to select and highlight data. I felt as if I were actually interacting with the data, rather than just processing it.

To start the software, you must set a handful of environment variables, and a script is provided for that purpose. Then, a single command starts the Point & Click environment. The startup commands are:

```
source /usr/local/pvi/wavepcm/bin/
wvptsetup wavepoint
```

After that, you do everything from icons and menus.

Two features facilitate learning to use PV-Wave Point & Click: a detailed demonstration and an online tutorial. The demonstration walks you through 2-D, 3-D and animation graphics development. Step-by-step instructions are included as a text file, so you can repeat parts of the demo. First, I ran the demo all the way through, then replayed some of the more interesting parts. Finally, I printed the demo text and walked through those sections.

After completing the demonstration, I turned to the tutorial. This uses a separate information window to guide you through the key features of 2-D graphics generation, 3-D graphics generation (in-

**PV-Wave Point & Click  
delivers all the benefits of  
a GUI and uses all the tools  
available under Motif:  
pull-down menus, icons,  
push buttons, scroll bars  
and sliders.**

cluding some image manipulation) and data animation.

### All Data Types Welcome

Aside from the fine user interface, PV-Wave Point & Click is internally complete and feature-rich. It can automatically read in a variety of data types and formats, process them using sophisticated mathematical or statistical techniques, and generate output for display, hardcopy, or input to other programs or systems.

You can get source data into PV-Wave Point & Click in several ways. The product can read ASCII data, native binary, 8-bit images, 24-bit images, TIFF files and Sun raster files. The ASCII input function can read both free and fixed formats. The fixed-format ASCII input function is particularly useful for those who need to import data from scientific or engineering codes, many of which can

produce tabular output. The product also can create custom input formats so that you can read in non-standard binary or image data.

I tested the fixed-format ASCII input function by first opening the Preview ASCII window on a tabular report file I previously created. It displayed the contents of the ASCII file. Then, using the mouse, I selected and defined headers, data records and data fields. Once everything was defined, I clicked on a push button, and PV-Wave did the rest.

Once you have pulled data into PV-Wave Point & Click, you can manipulate it in many ways to produce graphs and images. You can apply simple math functions, advanced math functions, curve fitting, statistical functions and image processing functions to source data to produce new data sets. Advanced math functions include Bessel functions, cross products, Gaussian integrals, fast Fourier transforms (FFT), differentiation and interpolation. Curve fitting methods include least squares, weighted least squares, polynomial surface, regression curves and spline methods. Statistical functions include correlation, histograms, maximum, mean, median, minimum, standard deviation and summing. (Noticeably absent were percentile functions.) Image processing capabilities include convolution, filtering, edge enhancement, resampling and FFTs.

### POINT & CLICK TO MORE DATA

Precision Visuals recently announced Version 2.0 of PV-Wave Point & Click.

The most significant feature in Version 2.0 is its Database Visualizer (DBV), a set of interactive tools that lets you query, subset and display tabular or row/column data. Users now can incorporate database management systems including Sybase, Informix and Oracle, to visually analyze data within graphs.

Another significant announcement associated with this new version is a price reduction of nearly 50 percent. You now can purchase a single floating license for \$2,495.

PV-Wave Version 2.0 now includes a date/time management and display, which allows you to automatically collect, process and display time-series with flexible calendar axes ranging from years to seconds. A feature called quick actions automates a variety of complex or repetitive tasks allowing you to move from data import to display in 70 percent less time than in the previous version. An Encapsulated Postscript Interchange output now allows you to integrate PV-Wave Point & Click images directly into desktop publishing products like FrameMaker or Interleaf.



Adobe Systems Inc.  
1585 Charleston Rd.  
Mountain View, CA 94043  
(415) 961-4400  
**CIRCLE 310 ON READER CARD**

QMS Inc.  
P.O. Box 81250  
Mobile, AL 36689  
(205) 633-4300  
**CIRCLE 309 ON READER CARD**

Tektronix Inc.  
P.O. Box 1000  
Wilsonville, OR 97070  
(503) 685-2838  
**CIRCLE 308 ON READER CARD**

We tested many of these functions by manipulating data sets provided as examples with PV-Wave. The wide variety of options eliminates the need to use other packages to do statistical or mathematical analysis on the data before importing it into a plotting package for output generation.

You can get processed data and images out of PV-Wave Point & Click in an easy and flexible manner. Data export functions can deliver data in the most popular industry-standard formats. Output formats include HP-GL, HP-PCL, PICT, Adobe PostScript, QMS QUIC and Tektronix 4510 Rasterizer formats.

PV-Wave Point & Click is a superior product, combining the best analytical aspects of a mainframe graphics manipulation tool with the best features of a dedicated image processing system.

To provide the user with a choice of interface, Precision Visuals offers two versions of PV-Wave, the Point & Click

product and the original command line product, called PV-Wave CL. The company recently announced PV-Wave CL V4.0. Version 4.0 features added functionality to areas such as connectivity, data access and manipulation, graphical display techniques, and ease of use. ■



VERY FEW PEOPLE  
GO TO A CONCERT  
JUST TO HEAR THE  
FRENCH HORN.

By itself, an individual instrument is of questionable value. But when it's integrated into the overall performance of the orchestra, the results can be breathtaking.

At WTW, we're helping a number of businesses achieve the same kind of results through information technology consulting. Our services include Systems Integration, Project Management, Application Development, Rightsizing, and Information Technology Strategic Planning.

So, before you run the risk of making a costly mistake with systems integration, give us a call. It's quite possible that we could keep you from hitting a sour note.

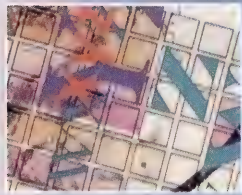


WESSON, TAYLOR, WELLS  
& ASSOCIATES, INC.

P.O. Box 23587 • Columbia, SC 29224 • 1-800-833-2891  
Offices In: San Francisco, Valley Forge, Raleigh, Charlotte, Atlanta

U.S. Postal Service STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION Required by 39 U.S.C. 3685			
1. Title of Publication <b>HP Professional</b>		2. Issue Date <b>10/16/92</b>	
3. Frequency of Issue <b>Monthly</b>		4. No. of Issues Published Annually <b>12</b>	5. Annual Subscription Price <b>N/A</b>
6. Complete Mailing Address of Known Office of Publication (Street, City, County, State and ZIP+4 Code) (Do not print): <b>101 Wilmer Rd. Hershman, Pa 19044</b>			
7. Complete Mailing Address of the Headquarters or General Business Office of the Publisher (Do not print): <b>101 Wilmer Rd. Hershman, Pa 19044</b>			
8. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not print): <b>Leslie Ringe 238 Bedford St. Suite 3 Lexington, MA 02173</b> <b>Don Marks, Editor-in-Chief 101 Wilmer Rd. Hershman, Pa 19044</b>			
9. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given. If the publication is published by a corporation or partnership, its name and address must be stated.) (Do not print): <b>N/A</b>			
10. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities (If none, so state): <b>None</b>			
11. For Completion by Nonprofit Organizations Authorized to Mail at Special Rates (Include Section 501(c)(3) only): The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes (Do not print): <b>None</b>			
12. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
13. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
14. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
15. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
16. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
17. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
18. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
19. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
20. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
21. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
22. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
23. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
24. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
25. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
26. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
27. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
28. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
29. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
30. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
31. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
32. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
33. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
34. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
35. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
36. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
37. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
38. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
39. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
40. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
41. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
42. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
43. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
44. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
45. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
46. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
47. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
48. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
49. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
50. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
51. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
52. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
53. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
54. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
55. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
56. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
57. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
58. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
59. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
60. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
61. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
62. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
63. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
64. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
65. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
66. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
67. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
68. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
69. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
70. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
71. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
72. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
73. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
74. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
75. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
76. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
77. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
78. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
79. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
80. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
81. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
82. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
83. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
84. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
85. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
86. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
87. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
88. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
89. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
90. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
91. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
92. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
93. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
94. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
95. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
96. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
97. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
98. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
99. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			
100. For Completion by Nonprofit Organizations (Do not print): a. Name of the Organization: _____ b. Purpose, Function, and Nonprofit Status: _____			





## MANAGING YOUR HP 3000

**John P. Burke**

### The Stronger, More Open HP 3000 Rises To Battle Big Blue

# A Resurrection

The HP 3000 is 20 years old this month. Albeit a little early, HP

even held a birthday party celebration for it during INTEREX '92. Milestones like this cause one to ponder: Will there be a 30th birthday party? Or, will the HP 3000 disappear as so many of its former competitors have?

The short answer, I'm happy to say, is yes, there will be a 30th birthday celebration for the HP 3000. Hurricane Andrew may have crashed the party in New Orleans, but it didn't dampen HP's ultimate message: The HP 3000 is back and ready to kick some Big Blue butt. Both the system itself and HP's approach to the commercial multiuser market have changed. All indications are that the HP 3000 will be repositioned as a cost-effective alternative to IBM's wildly successful AS/400.

Two years ago, I didn't even think the HP 3000 would make it to its 20th anniversary. At that time, IMAGE, which has been synonymous with MPE since the computer's inception, had just been unbundled from the operating system—apparently consigning it to the database scrap heap in favor of ALLBASE/SQL. MPE V and other “mature” software products (and users) were being abandoned. All of HP's marketing talk was about how open systems (which two years ago still meant UNIX) and PC LANs were going to revolutionize the industry. But it hasn't quite happened that way—at least not yet.

Since that time, HP has performed an amazing self-evaluation and discovered that a strong, “open” HP 3000 is in the company's best interest.

With thousands of productive Classic HP 3000s still in use, HP realized it had a

**The HP 3000 will  
be repositioned as a  
cost-effective alternative  
to IBM's wildly successful  
AS/400.**

cash cow of enormous proportions on its hands—one that required only a modest investment in feed to maintain. Considering the low margins afforded by PA-RISC systems, HP also realized it was not in its best interests to be strictly a vendor of UNIX boxes. Consequently, in the last two years, more enhancements have been made to MPE and MPE XL than in the previous decade. Some analysts even go so far as to maintain that MPE/iX will be more “open” than many UNIX systems.

A note from the conference: POSIX.2 won't be a separate product as originally announced. It will be rolled into MPE/iX 4.5 along with POSIX.1.

## New Image For IMAGE

When does a non-relational database look like and act as, but still out-perform, a relational database? Answer: When it's TurboIMAGE/iX interfaced with DISC's OMNIDEX or Bradmark's SUPERDEX and outfitted with HP SQL for IMAGE.

What is HP SQL For IMAGE? It promises to be nothing less than a true read/write SQL interface for TurboIMAGE (availability: 1993; details about pricing available in late 1992). This product should not be confused with ALLBASE TurboConnect, which requires ALLBASE/SQL.

HP SQL For IMAGE represents a technical breakthrough of sorts. Rich Sevcik, who as head of the new Systems and Servers Group is now ultimately responsible for *both* the HP 3000 and HP 9000 lines, commented to me that HP SQL For IMAGE contains unique, possibly patentable features and is the first read/write SQL interface for a non-relational database management system.

Add to this announcement delivery of the previously promised critical item update feature (available also on MPE V systems!), AIF procedure exits, and the third-party indexing interface, and you have a flexible and robust DBMS. Other anticipated IMAGE enhancements include dynamic detail dataset expansion, increased DBINFO functionality, and an un-“deadlock”ing tool.

Of course, cynics might say that IMAGE is finally what it could have been years ago—before it became politically correct to speak only of relational DBMSs. Nonetheless, it hardly sounds as though this DBMS is being put out to pasture. Rather, IMAGE is better than ever, and it's still better than anything else.

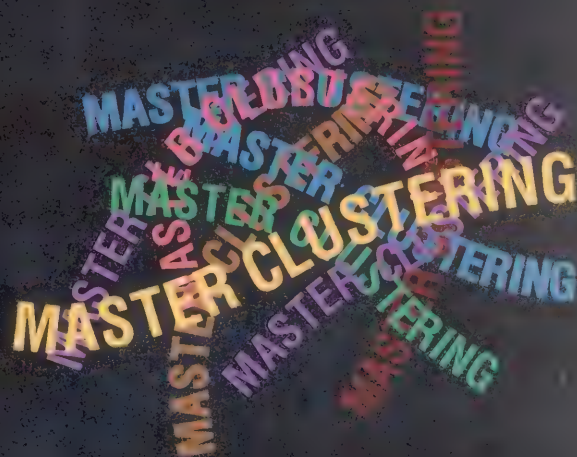
## Check Out Those Ports

Not long ago, the only software vendors with booths at an INTEREX show were relatively small purveyors of HP 3000-only products: mom 'n pop operations. Not any more. The companies that cut their teeth in the HP 3000 market have expanded to embrace other platforms including the UNIX variants, VMS and even OS/400. Check it out. Practically everyone “does UNIX” now. Consider Cognos, Speedware, DISC, etc.

What's more, software giants such as Oracle have entered the HP 3000 market. Another example is the surprising



# Complaints



As of 920105, Adager's new algorithm puts secondaries in their best logistic position on MPE V, MPE/XL and MPE/iX (POSIX).

These Adager functions take advantage of the new technology:

- Master Capacity Change
- SearchField Redefinition
- Master Repacking
- Master Dataset Fix

Besides giving your master datasets a new lease on life, these Adager functions run even faster now.

## Cure

IMAGE/3000 Databases

TurboIMAGE Databases

TurboImage/XL Databases

TurboIMAGE/iX Databases

**Adager**

## Hard to swallow for Spectrum?

Not at all, since Adager fees are independent of HP3000 computer type.



news that IBM has entered the downsizing fray by licensing CICS to Hewlett-Packard for MPE/iX and HP-UX! (Of course, rumor has it that some vendors had their arms twisted ever so gently by HP: "Want us to help you pursue the HP-UX market? Then port to MPE/iX also." If you run HP 3000(s), the new ports are good news regardless of how they came about.)

The uncertainty of the last few years has forced many traditional HP 3000 vendors to expand and, in the process, become stronger. Furthermore, market uncertainty has attracted many products to the HP 3000 from other markets. Both developments make the HP 3000 a more desirable platform than ever before.

### A Few Discordant Notes

I am an unrepentant cynic, so of course not everything about the HP 3000's future seems rosy to me. Patching of MPE — both the frequency of patches and the duration of the patch process — is a per-

sistent thorn in the side of system managers. It's ironic that a system known for high availability has an Achilles' heel when it comes to updating the OS.

Also, there is still unhappiness among the installed base over changes in sales support. This was the melt-down topic at the Atlanta ICMS management roundtable and continues to prompt lively discussion. Manuel Diaz, general manager CSO/Americas, in both his

address to the New Orleans conference and in the management roundtable, spoke extensively on this issue. He admitted some past mistakes, particularly in communication and promised a new "team" approach to answer the concerns. Unfortunately, he wasn't ready to provide details, so I guess we'll have to wait.

Would you like to continue to see articles on this topic?  
Circle on reader card  
yes 338 no 337

## BREAK OUT THE CHAMPAGNE!

I'm pleased to report that I just witnessed the installation of an HP 3000 917LX in *HP Professional's* DP Labs. Yes, I know, I said this was going to happen a year ago. But it's finally here.

With this addition to the lab, we intend to increase our coverage of HP 3000 nitty-gritty both in this column and in *HP Professional* as a whole. Product reviews, how-to articles and technical discussions all will receive greater attention, because we know these are what you're interested in and what you want to see more of. Thanks to HP's generosity, we now have even better facilities to provide the system management tips and product information you're looking for. — J.B.

# **Dataproducts.**

*Serious Printers for  
Serious People!*

#### LASER

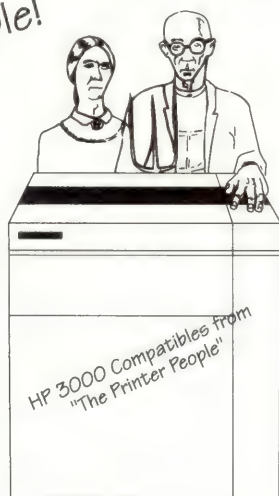
Continuous Form  
Large Format  
Color

#### IMPACT

including...  
LM1200  
LM900  
LM615  
LM315

#### CUSTOM SOLUTIONS

1-800-862-8787



IDEAL is Dataproducts' newest authorized distributor!

**IDEAL**  
COMPUTER SERVICES INC.

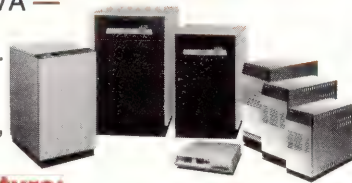
113 Rickenbacker Circle  
Livermore CA 94550  
510-447-4747  
FAX: 510-447-4780

## Power Protection for Your HP or Apollo

Better yet, this is a pricing breakthrough for the highest quality and most advanced protection available.

**Don't buy a UPS until you call Deltec.**

From 2KVA to 60KVA — computer-grade power for all of your HP minis, Apollo workstations, LANs, and peripherals.



#### Deltec UPSs feature:

- ✓ Parallel On-Line Technology
- ✓ Fast Battery Recharge
- ✓ 300% Overload for 10 Cycles
- ✓ Highest Efficiency
- ✓ Automatic Transfer Switch
- ✓ RS-232 Interface/HPUX software available
- ✓ 100% Satisfaction Guarantee
- ✓ UL & CSA
- ✓ And much more...



Some models available directly from HP check with your local CE.

## **DELTEC**

**A Fiskars Company**

2727 Kurtz Street • San Diego, CA 92110  
Phone: (800) 854-2658 • (619) 291-4211 • FAX: 291-2973

CIRCLE 297 ON READER CARD

CIRCLE 500 ON READER CARD



# WHEN YOU RIGHTSIZE WITH OUR ACCOUNTING AND HR SOFTWARE, IT'S SMOOTH SAILING.



Rightsizing opens the way to greater productivity. But only Lawson offers the combination of products, policies and support that ensures smooth passage to your rightsizing destinations.

Rightsizing the world's best companies requires software with power and flexibility. Our mainframe-caliber, CASE-based software is easy to install and maintain. Our applications are priced based on the number of users, not CPU size. And our

unique open licensing policy lets you migrate from one Lawson-supported platform to another without additional license fees.

Our accounting and HR software solutions are available for HP 9000® and other UNIX®-based systems. We also have solutions for distribution and retail management. For case histories of companies that have sailed through rightsizing using Lawson software, call **1-800-477-1357, ext. 826**

**LAWSON**  
Software

UNIX is a registered trademark of UNIX System Laboratories, Inc. HP 9000 is a registered trademark of Hewlett-Packard Company.

S O F T W A R E F O R H P 9 0 0 0

CIRCLE 463 ON READER CARD





## NETWORKING

**Tim Cahoon**

to access systems across a network? Relax. There are a few terminal emulation products out there that offer viable networking options.

Walker, Richer & Quinn's Reflection Series of terminal emulation software is divided into HP and DEC product lines. The HP line provides complete emulation for HP terminals, plus VT102 and ANSI emulations. HP graphic terminal emulation is also available. The DEC product line is actually growing in popularity with UNIX users because many UNIX products support DEC/VAX emulation. All WRQ products are available for both the IBM PC and the Macintosh. A new product called Reflection 8 provides IBM 3270 terminal emulation from an IBM host via a Telnet TCP/IP session.

MiniSoft Inc.'s MiniSoft92 runs on IBM PCs and UNIX systems, including HP-UX, SunOS, SCO UNIX and XENIX. It's the only terminal emulator with block mode support that runs on UNIX systems. The software provides HP and DEC VT102 terminal emulation, but HP graphic terminal emulation is not available. MiniSoft takes a minimalist approach to connectivity: It offers terminal emulation and networking capabilities without many frills. This, the company believes, is exactly what most users really want.

Unison-Tymlabs, on the other hand, goes all out with the bells and whistles for its Business Session for Windows product. Business Session is unique because it was developed solely for the Windows and HP NewWave environments. A DOS version of the product is

Does it seem like it will take a small miracle to get your PCs

# Terminal LAN



not available from Unison-Tymlabs, although one does exist: It's HP AdvanceLink. Tymlabs developed HP's basic terminal emulator as part of a long-standing development agreement.

Tymlabs was the first to develop a Windows-based terminal emulator, and Business Session is still the only emulator that supports HP NewWave. It's available for both the PCs and Macs and provides standard emulations: HP term, DEC VT102 and ANSI. HP graphic terminal emulation is available only in the Macintosh version.

HP AdvanceLink is available in both DOS and HP NewWave versions. The NewWave version and Business Session are the same product, and this version is also available for the Macintosh. Because of the product development cycle, the version available from HP will be somewhat older than those available directly from Unison-Tymlabs. The DOS version of AdvanceLink has been around as long as the Reflection Series from WRQ. AdvanceLink for MS-DOS provides both HP and ANSI terminal emulation.

One advantage of buying either or both of the AdvanceLink products is that

HP provides customers with worldwide support and one-stop shopping.

## Network Necessities

Before we take a look at the software components you'll need to network these products, let's take a quick review of the network link.

First, you must have a network interface card (NIC) with some software drivers. These drivers can be proprietary or they can conform to the NDIS, ODI or Packet Driver standards. These three standards allow your terminal emulation software to access the network through your NIC concurrently with your LAN software. You then can use LAN services, such as printing during your terminal session. Next, you need a protocol stack such as TCP/IP. On top of that you need to have Telnet, FTP or NS/VT—HP's proprietary virtual terminal program. Telnet and FTP allow you to access UNIX and other TCP/IP-based hosts. Finally, on top of all of this software, rests your terminal emulation program.

While all the emulators we've discussed support serial connections and proprietary NIC drivers, not all support



# HP welcomes the new kid on the block.

## Ross Systems HP.

**Financial, Manufacturing, Distribution, and 4GL Software for HP-UX and MPE/iX.**

Before you consider a move in your application neighborhood, come check out the newest development in open architecture applications: Ross Systems HP. We offer mainframe level functionality, reliability, and performance. With the best in financial, manufacturing, distribution, and 4GL software, this new kid could be your best friend yet.

**Give us a call today at (404) 257-9198, Ext. 109.**



**Your HP Software Source**

555 Twin Dolphin Drive, Redwood City, CA 94065

**Financial • Manufacturing • Distribution • Fourth Generation Language**

The Ross Systems logo is a trademark of Ross Systems

CIRCLE 153 ON READER CARD



the newer driver standards. The NDIS standard is basically supported by all the vendors, although MiniSoft's support is limited. With Novell NetWare dominating the network operating system market, it's surprising that only MiniSoft provides ODI support. The WRQ Reflection Series is the only emulator of-

fering support for the growing number of Token Ring users. And despite the fact that more of us are using UNIX systems, only MiniSoft provides support for the Clarkson Packet Drivers.

All the emulators use either TCP/IP stacks from third-party software vendors, or they provide their own. The WRQ

Reflection Series, Business Session and the AdvanceLink products all have optional modules that provide their own protocol stacks, as well as the Telnet, FTP and NS/VT software. MiniSoft92 is the only product that provides everything in the basic package. Reflection users need the 3000 Connection product, which includes DEC LAT, Telnet and FTP, NS/VT, a TCP/IP stack and NDIS drivers. Business Session and HP AdvanceLink users need one of the following: HP OfficeShare III, HP Network Services 2.1/MS-DOS, or HP ARPA Services 2.1/MS-DOS. All emulators, with the exception of MiniSoft92, support multiple concurrent network sessions.

Now for the nitty-gritty: Prices for terminal emulators vary tremendously. Reflection 1 (the HP 3000 emulator) and the 3000 Connection software are \$255 each. Minisoft92 is \$159, including all the network software. Business Session costs \$329, for the Windows only version, or a \$429 package is available, which includes both the Windows and HP NewWave versions. HP AdvanceLink for DOS retails for \$369, while the NewWave version is \$325. HP Network Services 2.1/MS-DOS and HP ARPA 2.1/MS-DOS retail for \$395 each. The HP network software is used by both the Business Session and AdvanceLink products. All of these products are available at discount when you buy multiple copies.

Would you like to continue to see articles on this topic?  
Circle on reader card  
yes 348 no 347

Minisoft  
13617 State Hwy. 9  
Snohomish, WA 98290-9000  
(800) 682-0200  
**CIRCLE 353 ON READER CARD**

Tymlabs (Unison-Tymlabs)  
811 Barton Springs Rd.  
Austin, TX 78704  
(512) 478-0611  
**CIRCLE 352 ON READER CARD**

Walker, Richer & Quinn  
2815 Eastlake Ave., E.  
Seattle, WA 98103  
(206) 324-0350  
**CIRCLE 351 ON READER CARD**

*Thanks to Harmonizer, over 1400 Aldon customers are humming a new tune about installing new packaged software releases.*

# A classic from the Aldon repertoire. Harmonizer.

Harmonizer allows you to make modifications to your software applications and still take advantage of new releases.

In fact, Harmonizer can save you 60-80% of the time you now spend putting up new releases.

Harmonizer identifies and reports all changes made by you and by the vendor on a new release, then merges your changes with the new release to create new production versions of your programs. It's that simple.



**ALDON®**  
The Art of Change Management

Aldon Computer Group  
401 15th Street  
Oakland, California 94612  
(510) 839-3535  
(800) 825-5858  
FAX: (510) 839-2894

And the elegant Harmonizer user interface makes it easy to learn and use.

Conduct your own examination—for a free software trial, call toll free, 1-800-825-5858.

**CIRCLE 163 ON READER CARD**





23:30

Lights Out  
Operation

## 12 Tape Autochanger For Unattended Backup!

Herstal's DAT Autochanger provides up to 96 Gigabytes of **Unattended Backup** so you can enjoy a good night's sleep without worrying about who or what is backing up your data.

Available as an upgrade to your existing **HP DDS drive**, or as a subsystem containing HP's new 8 GB drive, our Autochanger is the perfect solution for your backup needs.



3171 W. Twelve Mile Road  
Berkley, MI 48072-1339, USA  
Phone: (313) 548-2001  
Fax: (313) 548-2010

CIRCLE 173 ON READER CARD





## OBJECTIVELY SPEAKING

Richard Riehle

development environments, most application development teams still rely on COBOL to get the job done. Contrary to popular belief, COBOL is alive and well in the '90s, and the ANSI-85 standard has introduced features that can have enormous benefits in productivity, programmer satisfaction and cost control.

Sadly, many programmers aren't aware of these new features yet, and few programming managers have enough computer science education to understand the implications of these features. To develop COBOL-85 applications in the HP world, you need to be using MPE XL (MPE/iX) or HP-UX — MPE V won't do. If you're using either of those operating systems or intend to migrate to one of them, you should seriously consider the benefits of COBOL-85.

Among its many innovations, COBOL-85 introduces significant improvements in the techniques for building modular programs. In the past, program modules were designed around the PERFORM verb and all variable names were located in a "global" DATA DIVISION. With COBOL-85, the PERFORM verb has a new and reduced role. Its new role is to delimit a small collection of statements such as in-line loops, or multiple IF..END-IF statements. The programmer still has the option of using the PERFORM verb to call paragraphs/sections in the PROCEDURE DIVISION, but that is seldom a proper use of that verb under COBOL-85.

### Local CALLs

COBOL-85 introduces a capability that implements both modularity and local-

ization; an enhanced CALL verb. A limited form of the CALL verb appeared in COBOL-74, but from the perspective of

program design the new enhanced specification is a terrific improvement. Those with some experience with other languages, particularly PASCAL, will quickly recognize its value. In fact, anyone with a recent degree in computer science will understand how to build systems with the enhanced CALL verb, while those who know only COBOL probably will need to be re-educated.

Once your programming staff adopts a design method that uses CALL to enhance modularity and localization, you'll begin see benefits in the quality of your code, the ability to easily reuse existing "COPY" libraries, and greater productivity through team programming efforts. The old "COPY data-name REPLACING..." statement will go away, and you'll be able to use many of your existing COPY files exactly as they are

without modification. New COPY files can be designed to reflect the improved programming methods.

It will take time and patience to realize the benefits of COBOL-85's improved modularity and localization capabilities, but an ultimate increase in productivity will result from the investment in a new programming style. In fact, COBOL-85's enhanced modularity features should substantially reduce your program maintenance costs. And, if as in most programming organizations, maintenance consumes a large share of your programming budget, investment in COBOL-85 may free up resources you need to reduce your application backlog.

### What IF ...?

Every conditional statement in COBOL-85 has an associated scope terminator. In earlier incarnations of COBOL, statements were terminated with a period (.). The absence or presence of a period at a

```
PERFORM UNTIL END-OF-FILE
  READ IN-FILE
  AT END
    SET END-OF-FILE TO TRUE
    IF DATE-LOG = EMPTY THEN
      CALL DATE-LOG-ERROR-ROUTINE
        USING BY REFERENCE DATE-LOG-RESULT
        BY CONTENT DATE-LOG-VALUE
    END-CALL
  END-IF
  NOT AT END
    IF TRAN-CODE = ADD-RECORD
      CALL ADD-ROUTINE
        USING BY REFERENCE ADD-RESULT
        BY CONTENT IN-FILE-RECORD
    ON EXCEPTION
      CALL ADD-ERROR
        USING BY CONTENT IN-FILE-RECORD
    END-CALL
  END-CALL
  IF ADD-RESULT = ZERO THEN
    CALL REPORT-ROUTINE
  END-CALL
END-IF
END-READ
END-PERFORM
```

Figure 1: Scope terminators implemented in COBOL-85.



critical location could completely change the meaning of a logical statement. Many organizations established rules proscribing the use of nested IF statements to prevent programming accidents. The prohibition of nested IF's often would result in long, confusing statements that were harder to maintain than necessary.

Under COBOL-85, a nested IF is no longer as difficult for the programmer to decipher. Every IF should have a corresponding END-IF. When there is one IF statement nested within another, the END-IF clearly establishes the scope of each. Even the READ statement has an END-READ. In fact, the introduction of

## COBOL-85 GOES GRAPHICAL

With the advent of high-performance desktop systems, flashy graphical applications and visual-intensive executive information systems became de rigeur. But COBOL, perhaps the most popular development language for commercial software applications, offered only the barest building blocks for screen design, report generation and presentation graphics.

Historically associated with industrial strength, no-frills, character-based applications, COBOL offered little competition for C, C++ or specialized development environments like Microsoft Visual Basic or Interactive Development Environment's Software through Pictures when it came to development of applications capable of generating high-resolution graphics.

With the introduction of AcuView, Acucobol's, COBOL-85-based integrated graphics package, all that has changed. AcuView, which is available as an add-on product for Acucobol-85 on HP 9000 700/800 workstations and servers, allows application developers to incorporate graphs, charts and tables into their COBOL applications. Any screen or report available in an ANSI-85-compliant ACUCOBOL-85 business application can integrate presentation graphics that visually convey information once relegated to character-based data fields.

Using only five simple COBOL verbs (INITIATE CHART, LABEL CHART, ENTER CHART DATA, SET CHART ATTRIBUTE and DRAW CHART), AcuView allows developers to make graphical display or reporting features available in any application. Users can view screens or print reports that incorporate a variety of chart formats, including line, bar and pie charts, as well as other customizable graphics options, such as color, text size, shading, outline and bullet formats. AcuView delivers more than 100 standard chart templates, which can be customized for the needs of specific applications. Character height, text placement, legends, shading, colors, and many other graphic elements can be adjusted according to user or application needs.

Application developers can also control how end users access graphics and can provide users with the option of customizing presentation formats where necessary. For instance, in a given application, a developer may permit users to customize a title or heading but require that the information be displayed as a pie or bar chart. Easy-to-use menus, hot keys and command lines can be implemented to make graphical capabilities more accessible to end users.

Graphics generated with AcuView can be displayed on an EGA or VGA PC monitor or on any X Window device, thus bringing COBOL-85-based applications into the client-server world of front-end workstations and PCs. Also, AcuView generated graphics can be printed on any a Postscript-compatible printer, HP LaserJet printer or HP 3630 PaintJet printers, as well as Epson-compatible dot-matrix devices. Prices for AcuView start at \$979. For more information, contact Acucobol, Suite 201, 7950 Silverton Ave., San Diego, CA, 92126; (619) 689-7220. Circle 313 on reader card.

# Unattended, Automatic, Orderly

## Shutdown!

*PowerMon  
insures your:*

- Data Integrity
- Hardware Reliability
- Productive Uptime
- Business Productivity



"The Connection for Protection"

**POWERMON**  
POWER MONITORING PACKAGE

*PowerMon operates on the  
following systems:*

- Unix (including HPUX & Domain)
- Novell
- OS/2
- DEC VMS and Ultrix

Available thru most UPS  
manufacturers or contact:

**SE SYSTEMS  
ENHANCEMENT  
CORPORATION**

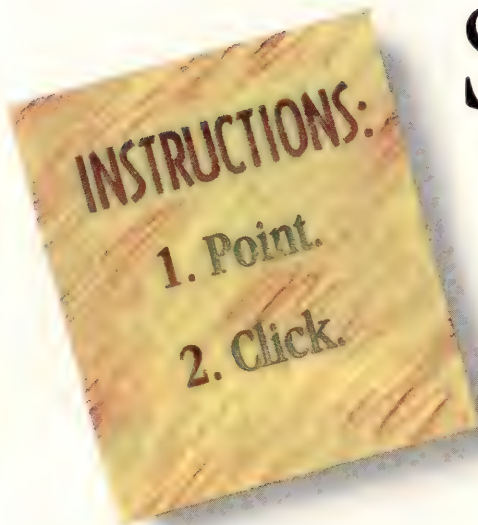
221 Chesterfield Industrial Blvd.  
Chesterfield, MO 63005

PHONE: (314)532-2855  
FAX: (314)537-2791

CIRCLE 457 ON READER CARD



# Session. Where Hosts



*Session provides easy, point-and-click access to host data via your PC or Macintosh.*

*The Session family from Tymlabs includes PC-to-host communication solutions for MS Windows, HP NewWave, and Apple Macintosh users.*



Bridging the information gap between hosts and PCs has never been easier. Thanks to Session, Tymlabs' PC-to-host connectivity software.

Whether you use Microsoft® Windows, HP NewWave®, or the Apple® Macintosh®, Session simplifies the challenge of sharing information with your HP 3000, DEC VAX, HP 9000, and other UNIX® hosts.

You may have used other PC-to-host alternatives. And they may have worked just fine — as long as you had just DOS-based PCs. Take a closer look at Session, however, and you'll quickly discover that it's designed to work in today's graphical, point-and-click PC world.

Moreover, every Session package provides superior HP terminal emulation, plus DEC VT100® and HP ANSI terminal support for access to almost any host computer.

## **Session's point-and-click interface gives you easy, familiar access to host information.**

Session adheres to the interface standards for MS Windows, HP NewWave, and the Macintosh, offering a common interface to all three platforms. Using Session on one is as easy as using it on another.

And because Session offers an easy-to-use, graphical front end to your host applications and data, it's your company's first, hassle-free step toward client/server computing.

## **Hand your communications tasks over to TermTalk.**

Session includes TermTalk, a unique scripting language that streamlines your routine operations — or your most sophisticated PC-to-host interactions. English-based, block-structured, and friendly enough for non-programmers,

TermTalk provides extensive control over Session's communications with hosts and other PC applications. What's more, compiled TermTalk scripts run on any Session platform, no matter where they were created.

Compose a script using TermTalk's built-in editor. Or try the convenient script recorder. As you perform a task, TermTalk follows along, automatically building the script. Next time, a simple keystroke sets it in motion.

Use TermTalk to automatically log on, send E-mail, retrieve host data and add it directly to your spreadsheet, print PC files on host printers, and much more. We even give you the tools to convert existing AdvanceLink® or Reflection® command files to TermTalk scripts.



*TermTalk, Session's easy-to-use, compatible scripting language, is just like having your own personal assistant. Use it to handle all your PC-to-host tasks.*



# and Desktops Meet.

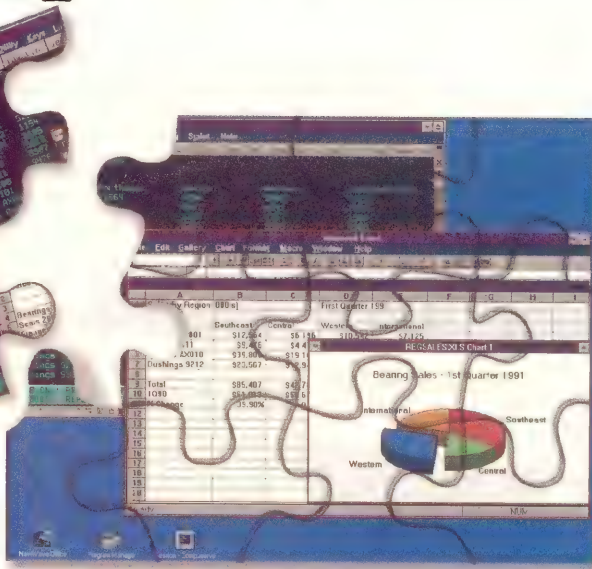
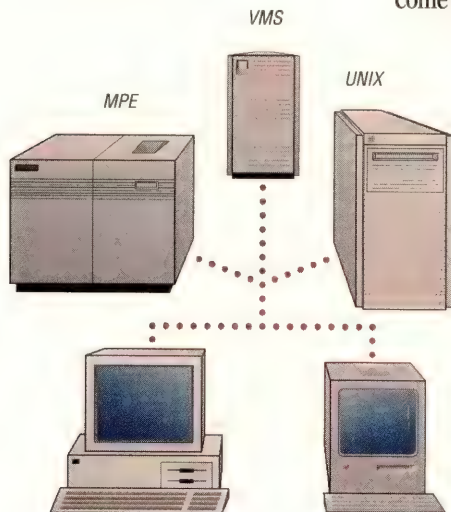
## Access and integrate the information you need, when you need it.

Working on a report? Need monthly sales and expense figures? Need data from several sources? No problem. Session delivers the data-sharing capabilities you've been waiting for.

For example, you can use cut-and-paste for a simple one-time exchange of data. Or use Session and Microsoft's Dynamic Data Exchange (DDE) to build real-time links between your host and your other Windows applications. And, Session for HP NewWave lets you bring host data within reach of NewWave's advanced object management capabilities.

## Weary of access limitations? Forget what PC-to-host connections used to be.

When it comes to connecting to HP, DEC VAX, and UNIX hosts — all from the same package — some products are plagued with limitations. Not Session. In fact, Session allows multiple — *even simultaneous* — connections with different host applications *and* different hosts, including your HP 3000, HP 9000, HP 1000, DEC VAX, and any UNIX host.



## Wide-ranging connectivity and networking capabilities.

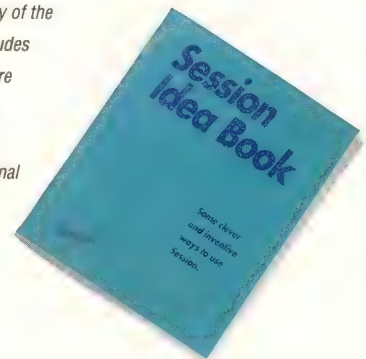
Wondering about Session's networking capabilities? Session supports all the popular networks: Novell,<sup>™</sup> Ungermann-Bass,<sup>™</sup> Banyan,<sup>™</sup> Microsoft LAN Manager,<sup>™</sup> AppleTalk,<sup>™</sup> and HP's AdvanceNet products. You can also perform multiple sessions over virtually any LAN.

Impressed? Well, these are just a few of the ways Session can make PC-to-host connectivity simpler — and more productive — for your organization.

Session is where hosts and desktops really come together.

Call us now for your **FREE** copy of the *Session Idea Book*, which includes ideas on how our customers are putting Session to work today. Interested in trying Session? We'll send you a fully-operational trial copy with a full 30-day, money-back guarantee. No obligation. Just call us.

**1-800-767-0611.**



Session offers Microsoft's Dynamic Data Exchange (DDE) and support for HP NewWave to help you retrieve, view, and integrate information from a variety of sources.

Session lets you access data over all the popular networks.

**Tymlabs<sup>®</sup>**

Tymlabs Corporation  
811 Barton Springs Road  
Austin, Texas 78704 USA  
(512) 478-0611  
Fax (512) 479-0735

Tymlabs (UK) Ltd.  
Munro House, 9 Trafalgar Way  
Bar Hill, Cambridge, UK CB3 8SQ  
0954-780088  
Fax 0954-780001



scope terminators, alone, is a good reason to use COBOL-85. The code fragment in *Figure 1* does not represent good coding style, but it does illustrate how scope terminators can be used in COBOL-85.

Notice the total absence of periods. No statement is complete without a scope terminator. Consequently, every statement is terminated by an END-... construct. There are some CALL statements nested inside the IF...END-IF state-

ments, and a perfectly readable IF...END-IF statement nested within another IF...END-IF. Also take note of the iteration structure defined by the PERFORM...END-PERFORM. This structure defines a loop that will terminate when we have set an 88 condition to true.

Even though the example shown is not good coding style, it is a good example for study. Your programmers can learn something about COBOL-85 from it. The important point to understand is the value of scope terminators.

## EVALUATE Options

Your systems analysts will appreciate this feature: COBOL-85 introduces a "case" selection capability with the EVALUATE..END\_EVALUATE statement. This is an important addition to the language because it greatly improves communication between the complex needs of the system user and the programmer. It is almost a "provable" construct. That is, you can actually use Boolean logic to prove the correctness and completeness of a well-formed EVALUATE statement. It can be used to bridge the gap between specification and actual COBOL code.

One of the systems analysis techniques that has fallen into disuse is the decision table, sometimes called a "truth" table. One reason for the decline in use of decision tables has been the difficulty of translating them into actual code. With COBOL-85, that difficulty disappears.

The correct use of the EVALUATE statement is as much of an accuracy issue as a productivity issue. But its effect on productivity cannot be ignored. Once again, the primary benefit in productivity is in program maintenance, rather than program construction. No one can doubt the virtue of the EVALUATE over consecutive IF...END-IF statements for simple clarity.

These few examples haven't exhausted the list of improvements in the ANSI-85 standard—not by any means. Also among the numerous new features are changes in array (OCCURS clause) initialization and processing, improved

# Setting the Standard for Network Printing

Emulex knows network printing. We set the standard with the introduction of the first print server in 1988, then followed with innovations like dual protocol TCP/IP and LAT, advanced SNMP, Unix "lpd", triple protocol with Novell IPX/SPX, and now; the NETJet™—an HP Modular I/O interface card for the HP LaserJet IIIs printers and DesignJet plotters.

Some claim to have a fast parallel port, but if performance is what you're after, our family of printer servers, from the P2501—with a single parallel port, the P2504—with 4 serial and 1 parallel port; the P3000—with 2 serial and up to 4 parallel ports; continue to blaze new speed records.

NOVELL

HP Modular I/O

TCP/IP  
IPX/SPX  
UNIX  
LAT  
DEC

The P2501 has been clocked at over 200,000 characters per second, fast enough to support 50 ppm laser printers. So whether flexibility or performance is your ultimate need, you'll find Emulex provides the solutions today and the innovations to support tomorrow.



Costa Mesa, CA 1-800-EMULEX3 ▲ San Jose, CA (408) 452-4777 ● Wakefield, MA (617) 246-7420

Wokingham, U.K. (44) 734-772929 ◆ Munich, Germany (49) 360-8020 ■ Milan, Italy (39) 39-639261 ► Paris, France (33) 134-659191

Taipei, Taiwan (886) 2-562-3230 ■ Sydney, Australia (61) 2-417-8585 ▲ Chai Wan, Hong Kong (852) 598-6982

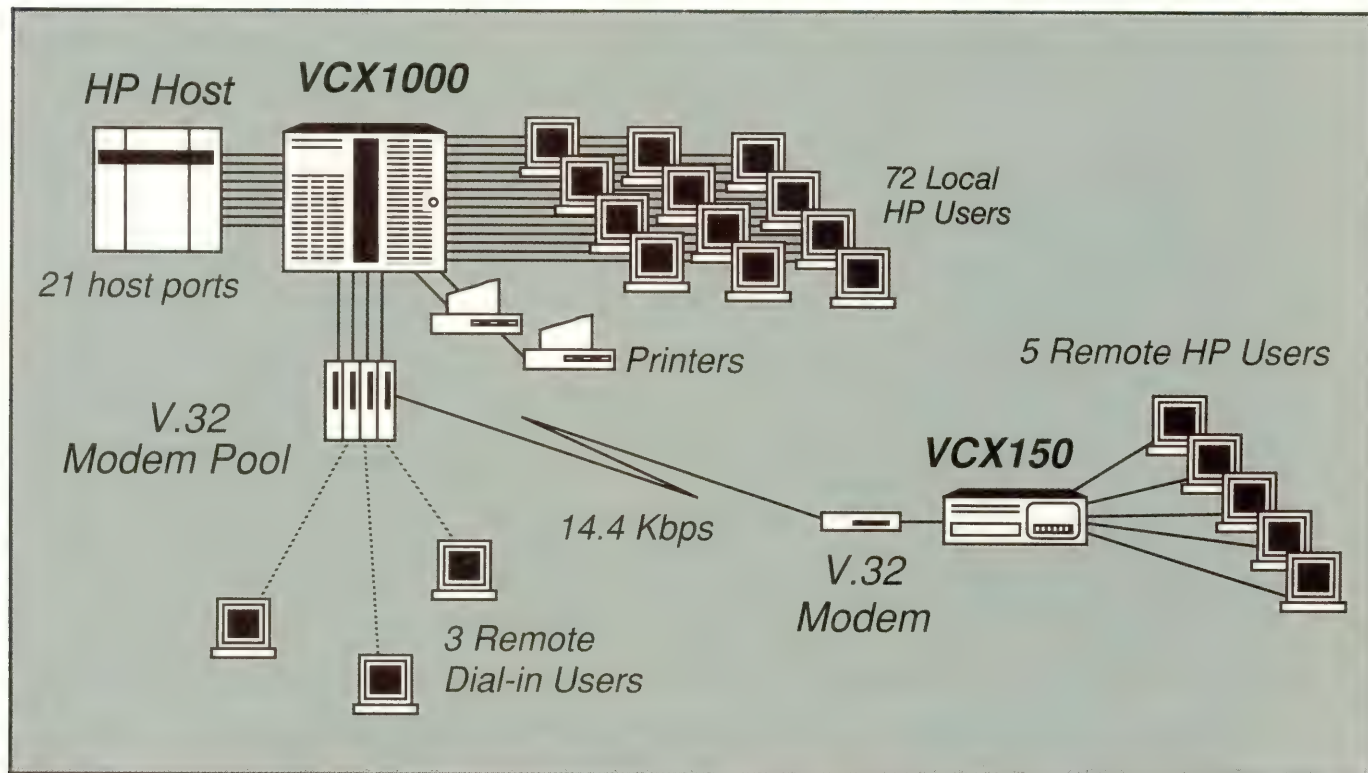
E-Mail: netjet@emulex.com

This advertisement refers to various companies and products by their trade names. In most, if not all cases, these designations are claimed as trademarks or registered trademarks by their respective companies.

CIRCLE 178 ON READER CARD



# PENRIL SAVED THIS GROWTHPOWER USER...



# \$143,000

The \$143,000 savings is for just one year. Over five years, this financial services firm will save \$201,000 with **Penril's VCX**.

**The Application:** connect additional GrowthPower users to the HP Host.

**The Traditional Solution:** Increase Growth Power site license to handle more users. Cost for this site (80 users): \$263,470 for first year; \$23,760 annual renewal fee.

**The Penril Solution:** Keep the GrowthPower site license the same, and use Penril's VCX to share port connections between multiple

users. Cost for Penril solution (80 users): \$119,775 for first year; \$9,300 annual renewal fee.

**The Result:** The company installed VCX and is enjoying significant savings.

Penril offers dedicated service and support with over 24 years of communications experience. Winner of the 1991 U.S. Senate Award for Quality and Productivity, we have the products and knowledge to make your networks run smarter.

Want to know how VCX can save you money? Call 1-800-4-PENRIL, ask for the *VCX/HP Application Guide*. Start saving today!



©1992 Hewlett-Packard Company

**WORLDWIDE SALES  
& SERVICE**

**1-800-4-PENRIL**

**USA**  
(800) 473-6745  
(301) 921-8600  
FAX: (301) 921-8376

**EUROPE**  
(44) 256-817-199  
FAX: (44) 256-817-204

**ASIA**  
(852) 846-3100  
(852) 846-3119  
FAX: (852) 810-0478

**LATIN AMERICA**  
(800) 473-6745  
(301) 921-8600  
FAX: (301) 921-8376



exception handling, new conditional expression operators, better string manipulation, control of scope and visibility of program units, and more. There is even an INITIALIZE verb, and every COBOL programmer immediately discovers its benefits.

### Program For Change

Despite the advantages of COBOL-85, it's never easy to teach old programming hands new tricks. Nobody feels immediately comfortable making major changes in the way they design and construct software. Successful transition to COBOL-85 requires a programming manager who understands its benefits, and a commitment by top management to the education and training of your programming staff. It also requires you to impart sufficient understanding of modern programming methods to your systems analysts and designers, so that they can develop software specifications that

Successful transition  
to COBOL-85  
requires a  
commitment by top  
management to  
the education  
and training of your  
programming staff.

make effective use of the new features in COBOL-85.

Once your staff understands the benefits of COBOL-85, and can put that understanding into action, the transition will take care of itself. Your programmers

and systems analysts will soon see how it can make their work more satisfying, and the opportunities for career enhancement.

It is, after all, almost 1993—eight years after the introduction of the standard. Perhaps that's long enough to wait before actually taking advantage of an improved technology — especially since this technology can favorably contribute to the productivity and financial well-being of your enterprise.

One final note: Most of the textbooks on COBOL are dreadfully deficient in their treatment of software design using COBOL-85. In general, the authors are still old-time COBOL programmers who lack the training or vision to convey the real value of the new standard.—*Richard Riehle is a software engineer for AdaWorks, Palo Alto, CA.*

Would you like to continue to see articles on this topic?  
Circle on reader card  
yes 336 no 335

# REPORT DISTRIBUTION. .

## *without paper!!*

Deliver information to users conveniently and in a more timely manner. Without the costs of paper, printing, and distribution.

With the capabilities of CDS/Scan added to your HP3000 system, users will actually prefer to view reports on-line.

CDS/Scan is affordable too. For more information, call or write..

**CHESTNUT**  
DATA SYSTEMS

6981 N. Park Dr, Suite 613  
Pennsauken NJ 08109  
(609) 662-1611

CIRCLE 102 ON READER CARD



# ADVERTISER INFORMATION

If you'd like more information about the products from the companies listed below, circle the appropriate number on the reader information card. This index is provided as an additional service. The publisher does not assume any liability for errors and omissions.

## ADAGER

The Adapter/Manager for IMAGE/3000 databases allows the manipulation of database objects with a wealth of action. Call (208) 726-8191 or circle 104.

## ALDON COMPUTER GROUP

Change management, quality assurance and program testing software. S/COMPAREHARMONIZER, ANALYZER. Call (800) 825-5858 or circle 163.

## BERING INDUSTRIES

Removable mass storage solutions, including hard disk drives, magneto-optical erasable drives, and high-capacity tape back-up for HP 3000/9000/1000 computers. Call (800) 237-4641, (408) 379-6900 or circle 105.

## BRADMARK TECHNOLOGIES INC.

Your total HP 3000/IMAGE database solution that includes: DBGENERAL, the most complete general-purpose database utility available in the HP 3000 market. And SUPERDEX, the fully compatible indexing package that provides unprecedented data retrieval speed and flexibility. Both are reasons why Bradmark is committed to provide premier data management solutions. Call 1-800-ASK-BRAD or circle 184.

## CHESTNUT DATA SYSTEMS

Chestnut Data Systems provides three system software packages for HP 3000 minicomputer systems. CDS/SecReview, a security audit control system. Conveniently review security and require users to regularly change passwords. CDS/Scan, an online report display and archival system. View reports online, reduce printing and distribution costs and archive critical information to DAT or optical disk. CDS/ACORN, a batch scheduling and control system. Let users schedule and control their own production runs. Call (609) 662-1611, FAX (609) 662-3688 or circle 102.

## COGNOS CORP.

Cognos provides application development software for HP MPE V, MPE XL and HP-UX platforms. Call (800) 4-COGNOS or circle 117.

## COMPUSERVE/COLLIER JACKSON

Compuserve/Collier Jackson serves as a Hewlett-Packard Premier Solution Provider for the HP 3000 Series of midrange computers. Its products include financial accounting and human resource management systems for cross-industry business applications as well as newspaper systems for circulation, business and advertising management. Direct inquiries to: Gary Vigneau, vice president of sales and marketing at (813) 872-9900 or circle 111.

## COMPUTECH SYSTEMS CORP.

The complete line of HP 3000, 1000 and 9000 equipment, compatibles and accessories. Call (800) 882-0201 or circle 101.

## CONTEMPORARY CYBERNETICS GROUP

Contemporary Cybernetics manufactures a complete family of backup systems that range in capacity from the 150 MB QIC streamer to a 2 TB cartridge handling system. Call (804) 873-0900, FAX (804) 873-8836, or circle 112.

## CREATIVE SYSTEMS

HP 3000 specialists, software development, systems management, data processing solutions, HP/PC communications, barcode data collection solutions specializing in Compsee, MARS, SATO equipment. Call (800) 383-2700, in CA (408) 294-6595 or circle 164.

## DISC

OMNIDEX provides instant online relational access to corporate data. Combine OMNIDEX, OmniWindow and OmniQuest for a complete online information system that can be added to any application with little or no code changes — all through PC-like windows. Call (303) 444-4000 or circle 113.

## DISK EMULATION SYSTEMS

Ultra high performance SOLID STATE STORAGE subsystems provide solution to I/O performance bottlenecks. Transaction rates in the thousands create system wide performance gains that reduce both user response time and batch job processing times from 50-500%. Call (408) 727-5497, FAX (408) 727-5496 or circle 459.

## EMULEX

Emulex's Network Systems business offers a complete portfolio of multi-protocol/multi-platform application servers for local and wide area network connectivity which include a line of communication servers supporting from 4 to 128 users; a portfolio of printer servers including the recently announced triple protocol MIO card for HP printers and plotters; and, wide area network interface cards for ISA/EISA/microchannel environments. Please contact Emulex Network Systems at (800) EMULEX3 or circle 178.

## HERSTAL AUTOMATION LTD.

Reasonably priced data storage subsystems with performance in mind. Call (313) 548-2001 or circle 119.

## HOOLEON CORP.

Custom printed Hewlett-Packard keys in your choice of colors. Keytop labels, keyboard templates and more. Call (800) 937-1337, FAX (602) 634-4620 or circle 474.

## IEM INC.

Affordable hardware solutions, from memory boards and interface cards to the latest in optical disk technology. Call (303) 223-6071, (800) 321-4671 or circle 122.

## INFORMATION BUILDERS INC.

4GL/DBMS for HP MPE XL and HP-UX systems offering application development, reporting and decision support. Supported on all major platforms. Call (212) 736-4433 or circle 247.

## ISA CO. LTD. / TEXAS ISA INC.

Complete range of mass storage devices and other peripherals for HP 3000, 1000 and 9000 from ISA. Call (713) 493-9925, FAX (713) 493-2924 or circle 245.

## KELLY COMPUTER SYSTEMS

Manufacturer of performance products: RAMDISC, Spectrum memory, Classic memory, and PC and LaserJet memory. CPU upgrades also available. Call (415) 960-1010 or circle 185.

## KINGSTON TECHNOLOGY CORP.

Kingston Technology designs and manufactures memory upgrades for PCs, laptops, workstations and laser printers. The Kingston product line also features mass storage subsystems and processor upgrades. Call (800) 835-2545, FAX (714) 435-2699 or circle 281.

## MARTECH

Highest quality solutions at the lowest price available. Complete line of memory products for HP 9000, 3000 and 1000 computers. Also RAM for Apollo Domain Series 2500-5500. Ship from stock. Call for your pricing today! Call (800) 582-3555 or circle 220.

## M.B. FOSTER ASSOCIATES LIMITED

DataExpress the #1 End User Computing Environment and report writer. EDI Windows, translation software. Reflection and the Network Series. Call (800) ANSWERS or FAX (613) 448-2588 or circle 155.

## NEWPORT DIGITAL CORP.

Accelerator cards for HP 9000 Series 200 plus HP 310 and HP 320. Ten-fold performance improvement. Call (714) 730-3644 or circle 246.

## O'PIN SYSTEMS

REVEAL from O'PIN SYSTEMS solves report distribution problems. Users go "paperless" and view reports directly from PCs or terminals. Saves time and fast payback too! Call (800) OPIN or circle 258.

## QUEST SOFTWARE

The only complete HP 3000 solution for:

- 1) High speed network file and database access.
- 2) IMAGE, KSAM and MPE file shadowing.
- 3) Low overhead network spooling.

Call (714) 720-1434 or circle 268.

## ROSS SYSTEMS HP

Financial, distribution, manufacturing and 4GL software for both the HP 3000 and 9000 product lines. Call (617) 622-1414 or (800) 942-3366 or circle 153.

## SMITH, DENNIS AND GAYLORD INC.

Project Accounting and Financial Management systems featuring state-of-the-art tools. Call (408) 727-1870 or circle 497.

## TELEMON

Bisync and async communication tools for HP 3000 and HP 9000 users. Call (916) 622-0630 or circle 234.

## TRYONICS INC.

Tryonics Inc. is a provider of quality remanufactured HP/Apollo, Apollo Domain series workstations, spare parts, network and software consulting services. Circle 477.

## UNISON/TYMLABS CORP. FORMATION

Formation for the HP 3000 is a complete electronic forms solution that lets MPE V and MPE XL users replace pre-printed continuous forms with electronically generated overlays printed on plain paper using laser printers. Call (800) 767-0611 for free demo or circle 139.

## WALKER RICHER & QUINN INC.

Makers of Reflection Series Software. HP terminal emulation for PCs and Macintoshes. Call (800) 872-2829 or circle 127.

## WTW INFORMATION TECHNOLOGY CONSULTING

A nationwide firm with extensive experience in HP and multiplatform environments. Services include systems integration, migrations and downsizing, project management, application development and information technology strategic planning. Call (803) 699-5781 or circle 180.

The logo for HP Professional, featuring the letters "HP" in a large, bold, sans-serif font, followed by the word "Professional" in a smaller, italicized, sans-serif font.



## AG Communication Systems Introduces Node Audit

AG Communication Systems introduced Node Audit, a system administrator's tool that audits and corrects system file organization in a multinode network.

Node Audit monitors the software and system data contents of nodes on a network and ensures that they conform to a particular configuration. Node Audit can be configured to audit file content, file existence, recursive and non-recursive directory content, soft-link resolution, type manager conditions and different master nodes for each file/directory audited.

Node Audit also keeps a log of all changes it makes and helps determine the cause of environment corruption problems by aiding in the problem isolation process.

Contact AG Communication Systems, 2500 W. Utopia Rd., Phoenix, AZ 85027; (602) 582-7511.

**Circle 397 on reader card**

## Applied Concepts Releases SCSI Monitor and Repeater

Applied Concepts introduced the ACI-1097 SCSI Monitor Plus SCSI bus monitor and repeater for file servers, workstations and RAID disk arrays.

The SCSI Monitor Plus regenerates and conditions internal SCSI bus signals to improve internal and external computer and peripheral performance. The SCSI Monitor Plus contains proprietary switching logic and individual "active" terminators for both internal and external SCSI ports. This circuitry has been designed to condition and extend the distance of external SCSI peripherals to six meters (19.7 feet). The SCSI Monitor Plus supports a maximum data rate of 10 MB per second and conforms to ANSI X3.131 (SCSI-1) and X3T9.2 (SCSI-2) specifications with single-ended device termination.

The price of the SCSI Monitor Plus Model ACI 1097 is \$345.



*Applied Concepts,  
SCSI Monitor  
+ ACI 1097*

Contact Applied Concepts Inc., 5350-H Eastgate Mall, San Diego, CA 92121; (619) 453-0090.

**Circle 399 on reader card**

## Parametrics Presents Statistical Analysis Library

Parametrics released its Statistical Analysis Library software package, available for HP workstations.

Designed to take you from data entry through all phases of data analysis and presentation, the Statistical Analysis Library offers a data manipulation front end and allows users to edit, scan, join, list, select portions, recode larger data sets, divide into subfiles and create variables by algebraic transformations, standardization, random numbers or user definition.

A range of routines is available from simple basic statistics like mean, standard deviation, variance, skewness, kurtosis, standard error, confidence intervals, coefficients of variation, correlation, and order statistics to general statistics, linear and non-linear regression, analysis of variance, principal components and factor analysis. It also includes a complete set of Monte Carlo simulation utilities.

Graphical or numerical outputs can be directed to the CRT, a file, or to an external printer or plotter for hard copy. Price is \$1,495.

Contact Parametrics Inc., P.O. Box 8035, Loveland, CO 80537; (303) 667-4030.

**Circle 389 on reader card**

## Penril DataComm Announces Async To LAN Connection

Penril DataComm Networks introduced the WANserver product family that simplifies connection of async devices to LAN-based devices.

The async devices can access the LAN-based devices running TCP/IP Telnet or LAT sessions. Up to 272 async users or 1,200 LAN user sessions can be supported.

WANserver delivers a way to connect these devices by combining the terminal server and stat mux technologies together in one chassis.

WANserver is available with both 5- and 19-slot chassis. Price is \$12,995.

Contact Penril DataComm Networks, 1300 Quince Orchard Blvd., Gaithersburg, MD 20878; (301) 921-8600.

**Circle 392 on reader card**



## Multiview Adds To Its Financial Solution

Multiview Corp. announced two new features and a purchasing system for the Multiview accounting line. Drill-Down is an online inquiry tool that enables you to report on financial data at any level of the company's financial reporting structure. MultiLink is a micro-to-host link that provides Lotus 1-2-3 users with direct access to financial information maintained on HP 3000s.

Multiview Purchase Order offers four-way line-item matching between requisitions, purchase orders, receipts and invoices, and complete integration with Multiview general ledger and accounts payable.

Drill-Down and MultiLink are included with Multiview general ledger for HP MPE XL. The license fee ranges from \$10,000 to \$84,000. Multiview Purchase Order is one of an integrated series of financial applications designed specifically for HP 3000 computers running MPE XL or MPE V. The license fee ranges from \$5,000 to \$42,000.

Contact Multiview Corp., One Van de Graff Dr., Burlington, MA 01803; (617) 229-2225.

Circle 391 on reader card

## XRunner Automates Software Quality Assurance Testing

Mercury Interactive Corp. announced XRunner, the automated software testing system for applications running on HP 9000/700 series UNIX workstations.

Designed for X Window-based applications, XRunner lets software developers bypass manual Quality Assurance testing by completely automating Q/A procedures. The XRunner automated testing system works through a GUI, inputting keystrokes and mouse movements to an application. It then monitors screen output for expected, or unexpected, results, recording errors for later review.

XRunner automatically generates, fully programmable test scripts. XRunner also performs stress-threshold testing using multiple code loops.

Cost of an XRunner base package with five licenses begins at \$50,000.

Contact Mercury Interactive Corp., 3333 Octavious Dr., Santa Clara, CA 95054; (408) 987-0100.

Circle 390 on reader card

## HP Presents Low-Cost MICR Font And Toner Cartridge

HP announced a new laser printer magnetic-ink character-recognition (MICR) toner cartridge and MICR font that allows checks to be printed on HP LaserJets.

HP's MICR toner cartridge is compatible with the HP LaserJet III, IIID, II or IID printers. The cartridge offers the same plug-and-play installations as other HP LaserJet cartridges. When a MICR job is finished, a standard HP LaserJet toner cartridge can be reinserted in the printer for other documents. MICR toner has a higher iron content than regular toner. The toner is charged magnetically as it passes through reader/sorter machines.

HP's MICR toner cartridge is \$169.

## CrossWind Offers Character Based Version Of Synchronize

CrossWind Technologies announced character-based support for release 1.2 of Synchronize, the personal and enterprise-wide time management tool.

Synchronize uses a client-server mechanism and distributed databases to support large numbers of users spread across geographically separate locations. Synchronize allows schedules, tasks and resources to be managed transparently. The workgroup features include the ability to schedule meetings and resources, distribute agendas and memos, and send out reminders. Synchronize offers private daily, weekly and monthly calendar views, pop-up notes and automatically updated to-do lists.

As in the original X version, the same pull-down menus and keyboard accelerators are employed. Because they differ only in



# The Power of Efficiency

## EDI WINDOWS: Enabling technology for business in the '90s

Successful businesses across North America know that Electronic Data Interchange (EDI) is bringing true automated efficiency to a host of everyday tasks formerly done by hand. EDI WINDOWS enables the link from your HP3000 to those all-important customers and suppliers, for purchase orders, quotations, invoices and much more.

EDI Windows supports X12, EDIFACT, TDCC Standards. In the electronic marketplace, EDI WINDOWS can work for you.

**For powerful solutions,  
call 1-800-ANSWERS**

M. B. Foster Associates Limited  
50 Water Street  
P.O. Box 580  
Chesterville, Ontario  
Canada K0C 1H0

Tel (613) 448-2333  
Fax (613) 448-2588



*Your Integration Software Supplier®*

EDI WINDOWS is a trademark of trinary systems inc.

CIRCLE 155 ON READER CARD



their interface, the underlying database works seamlessly with both.

Synchronize is \$100 per user and is available for the HP 9000 Series 300/400/700/800, the DECstation Series and IBM RS/6000.

Contact CrossWind Technologies Inc., 6630 Highway 9, Suite 201, Felton, CA 95018; (408) 335-4988.

**Circle 388 on reader card**

### ERDB Offers Performance And Predictable Response Times

Automated Technology Associates (ATA) presented its real-time Entity Relational DataBase (ERDB), an optimized, entity-relational database offering performance improvements over standard relational database management systems.

The entity-relation structure allows developers to build in predefined query paths for the types of questions typically asked in a real-time operations environment. It manages complex relationships by using linked lists and indirect references to provide

direct access to the data. ERDB manages one-to-one and one-to-many relationships without complex schema structures, serial searches or custom code. A binary search feature assures that speed will not degrade as size and complexity increase.

ERDB's SQL interface allows access to data residing in ERDB via standard SQL commands. In addition, the SQL interface allows the user to export data directly into relational database files to support traditional analysis, reporting and archiving activities. ERDB utilizes standards such as SQL, TCP/IP, IEEE 802.3 and POSIX, along with ATA's published interface specifications to make it easy for integrators and developers to integrate it with other software modules or applications.

ERDB is available now for HP-UX, DEC VMS/Ultrex, SCO UNIX and SunOS. Licensing is CPU-based.

Contact Automated Technology Associates, 9000 Keystone Crossing, Ste. 1000, Indianapolis, IN 46240; (317) 573-9000.

**Circle 384 on reader card**

### Bradmark Gives SUPERDEX Level 1 To HP 3000 Sites

Bradmark Technologies offers SUPERDEX Level 1 to all HP 3000 sites free of charge.

SUPERDEX Level 1 gives generic and partial retrieval through IMAGE for keyed lookups, along with range retrieval and concatenated indexes.

Call for more information on obtaining free copies of SUPERDEX Level 1.

Contact Bradmark Technologies, 4265 San Felipe, Suite 800, Houston, TX 77027; (800) ASK BRAD (275-2723).

**Circle 375 on reader card**

### LXE Ships Frequency-Hopping RF TERMINAL SYSTEM

LXE added a new Spread Spectrum RF terminal system to its line of Radio Frequency Data Communications (RFDC) for materials handling applications.

LXE's frequency-hopping Spread Spectrum system divides the band into multiple channels, automatically hopping from one channel to another to avoid

# Build Your Computer Library

## Find Answers to Your Computing Challenges in Back Issues of HP Professional

HP Professional has been answering important questions about HP computing for over 5 years. Now selected issues dating back to 1987 are available individually or in sets.

- Sets of all 38+ available issues
  - \$130 (US & Canada)
  - \$250 (Outside US & Canada)
- Single Issues
  - \$4 (US & Canada)
  - \$8 (Outside US & Canada)
- Call to order

**HP** Professional

101 Witmer Road, P.O. Box 616, Horsham, PA 19044-0616

**All orders must be prepaid.**

### ORDER BACK ISSUES NOW!

**FOR FAST SERVICE  
CALL  
(215) 957-4266  
with credit card information.**

3096-11/92BI



interference from other Spread Spectrum or Narrow Band users.

The LXE Spread Spectrum can operate with LXE Narrow Band systems in the same location using the same network controller. This allows users to take advantage of the attributes of both LXE Narrow Band and Spread Spectrum systems without worrying about them interfering with each other. The LXE Spread Spectrum network controllers and terminals also have the ability to handle high transaction throughput applications.

Contact LXE Inc., 303 Research Dr., P.O. Box 926000, Norcross, GA 30092; (404) 447-4224.

**Circle 387 on reader card**

### MST Announces Requirements And Traceability Management

Marconi Systems Technology (MST) released Requirements & Traceability Management (RTM), a CASE tool designed to assess the cost of a proposed change in complex project requirements.

RTM enables you to manage objects by recording interrelationships, ensuring that you remain informed and in control throughout the project lifecycle. When a requirement, a piece of code, or any project item has to be changed, RTM's impact analysis can show the effect of that change on every aspect of the project.

RTM provides direct interfaces to industry standard CASE and reporting tools for analysis and design, configuration management and desktop publishing. Interfaces to Teamwork and Software through Pictures allow RTM to extract information directly from data flow diagrams and automatically trace relationships between requirements. Interfaces to configuration management tools allow direct versioning and tracking of the requirements documents and all RTM objects. Interfaces to Interleaf and Framemaker generate high-quality reports from within RTM.

RTM is available on the HP 9000/700, Sun SPARC and DEC VAX/VMS systems. RTM price begins at \$20,000.

Contact Marconi Systems Technology, 4115 Pleasant Valley Rd., Ste. 100, Chatilly, VA 22021; (703) 648-1551.

**Circle 379 on reader card**

### groKker Offers Optical Character Recognition

Dakota Imaging presented a new release of groKker, a high speed Optical Character Recognition processor.

groKker scans documents, lifts data off forms and automatically indexes each document and stores the image and data. The data is then ready to be utilized by computer applications such as order entry, forms processing, databases, remittance processing, payroll timecards and tax returns.

groKker features high volume scanning of paper/microfilm forms at high speed, allowing operators to perform image-assisted data error correction. groKker includes a built-in, full-featured client-server database, and is directly compatible with database servers such as dBase III/IV, DB2, Ingres, Informix, Oracle and Sybase.

Contact Dakota Imaging Inc., 7130 Minstrel

## PC → HP-IB®

# \$195

LPTalk488™ is a simple software driver and cable that connects your PC or PS/2 to HP-IB (GPIB, IEEE488) printers and plotters at a very affordable price.

Communicate with HP-IB devices using standard application software like Lotus 1-2-3® and AutoCAD®

For a free HP-IB Interface Solutions catalog, call IOtech: (216) 439-4091.

**IOtech, Inc.**  
25971 Cannon Rd.  
Cleveland, Ohio 44146  
(216) 439-4091  
Fax (216) 439-4093

© HP-IB, Lotus 1-2-3, and AutoCAD are registered trademarks of Hewlett Packard Corp., Lotus Corp., and Autodesk, Inc., respectively.

**CIRCLE 129 ON READER CARD**

## Pro EDI

### Intelligent EDI

*Pro EDI* is the most advanced, flexible EDI utility available for HP3000 computers today. With *Pro EDI*, you have the power to integrate EDI seamlessly with any application software.

### User-defined EDI

*Pro EDI* gives you complete control over the conversion of EDI data formats to the formats used by your own software. With *Pro EDI*, you can define transaction sets *exactly* as your trading partners do. You have total flexibility to define the files you use to interface with your applications. You can control, at the element/sub-element level, the conversion of data to and from the EDI formats and the application software formats.

*Pro EDI* supports all ANSI X.12 standards and derivatives (such as TDCC, VICS, AIAG, etc.), and UN/EDIFACT.

*Pro EDI* runs on all HP3000 computers, both MPE/V and MPE/XL.

### Usage-based pricing

*Pro EDI* pricing is based on the number of document types you need, *not* on the type of CPU you have. You pay for what you use, not for the size of your machine.

*Pro Software, Inc.*  
Suite 240  
725 Barclay Circle  
Rochester Hills, MI 48307  
(313) 299-0020 (Voice)  
(313) 853-2442 (FAX)

**CIRCLE 277 ON READER CARD**



Way, Ste. 130, Columbia, MD 21045; (410) 381-3113.

## Circle 385 on reader card

### EISA Expansion Box Provides Series 700 With 7 EISA Slots

Arrow Computer Enhancements announced the EEB-4700, an EISA Expansion Box providing intelligent EISA Bus expansion for the HP 9000 Series 700 workstations.

The EEB-4700 expands a single EISA slot in the HP Models 720 and 730 systems into seven full-featured EISA slots. The EEB-4700 holds up to seven EISA cards and allows the user to mix and match EISA, AT and XT cards. You can use the EEB-4700 with X.25 Ethernet cards for networking, SCSI-2 cards for adding disks and tape drives, and serial cards for adding modems and terminals.

EISA and ISA cards installed in the EEB-4700 function as if installed in the host workstation, ensuring completely transparent operation. The slots in the EEB-4700 are compliant with the EISA specification, and support both EISA master and slave

operation. Each slot also supports EISA auto-configuration.

The EEB-4700 package includes an EISA buffer card, expansion chassis, documentation, cabling and software. Price is \$4,500.

Contact Arrow Computer Enhancements, Arrow House, Longmead Business Centre, Blenheim Rd., Epsom, Surrey, UK KT19 9QN; 0372-742557

## Circle 383 on reader card

### 100+ GB Of Disk Storage On A Single SCSI Host Adapter

Delphi Data announced RAIDer Model 6850, an intelligent SCSI Disk and Tape array with high performance caching and integrated tape backup system.

The 50 Mhz RAIDer Model 6850 increases system performance for LANs and minicomputers and can be configured from 660 MB to 100+ GB of disk storage on a single SCSI host adapter. Tape backups can be performed without host intervention and can be performed concurrent with normal system operation. Special operating system

drivers or patches are not required. RAIDer Model 6850 can be used on any system that supports SCSI disks, including HP, Sun, DEC, AS/400 and Novell. Price begins at \$4,990.

Contact Delphi Data, 2220 Hartford St., San Diego, CA 92110; (619) 275-2892.

## Circle 382 on reader card

### S.O.R. Provides A Quick Reference Card For MPE/iX

G.S. Communications released version 1.2 of Syntactic Online Reference (S.O.R.), an electronic quick reference card for MPE/iX professionals.

S.O.R. provides instant help on MPE/iX commands, intrinsics, error codes and messages, command interpreter variables, functions and more. New features in version 1.2 include documentation of View Plus intrinsics and better handling of dense VGA screen modes.

S.O.R. menus and topic screens are displayed in all VGA screen modes up to 132 by 60 characters. S.O.R. provides short but

### HP Professionals: Come Grow With Us!!

*Tufts Associated Health Plans has become a leader in Managed Care by focusing on creative solutions. Our superior reputation in this growing industry is due to unwavering commitment to innovation. Due to our EXPLOSIVE GROWTH, we have the following positions available in our fast-paced MIS department.*

### SR. PROGRAMMER/ ANALYSTS

In these senior-level technical positions, candidates will perform specialized programming assignments and provide technical and analytical support to system users and MIS staff. They will investigate, document, and propose solutions for systems issues and develop and maintain COBOL, VPLUS/IMAGE and 4 GL systems. These positions require a high degree of technical proficiency in areas such as software design/development, data base and resource estimation. Further requirements include a Bachelor's degree in a related field, previous experience in information systems application/programming on an HP3000, and proficiency in COBOL, VPLUS, IMAGE and Powerhouse. UNIX experience and knowledge of the Managed Care industry preferred. TAHP offers an excellent salary and benefit package. If you are interested in this opportunity, send your resume and salary history to: TAHP, HR. Dept., 333 Wyman Street, Waltham, MA 02254-9112. We are an equal opportunity employer.



“**H**P Professional is very useful. Especially the New Product section and articles on the HP 3000. In fact, the ads are even helpful. I called an advertiser for more information on the HP 3000.”

James Burton, IS Manager  
Boise Cascade

**HP**Professional

(215) 957-1500 FAX (215) 957-4264



complete information on the syntax, parameters structure and available parameters for most common commands and intrinsics. Topics are cross-referenced allowing users to easily jump from subject to subject. S.O.R. is \$39.95.

Contact G.S. Communications, P.O. Box 29565, Richmond, VA 23242; (804) 750-1746.

**Circle 381 on reader card**

## EDA/SQL Enables Access To Enterprise-Wide Data

Information Builders announced Enterprise Data Access (EDA)/SQL server software for HP 3000 Series 900 business systems and servers.

EDA/SQL client-server software provides transparent, cross-platform access to relational and non-relational data residing anywhere in an enterprise. It enables 3GL and SQL-based tools on the HP 3000 to access databases such as ALLBASE/SQL, KSAM, TurboIMAGE and HP flat files.

The price for EDA/SQL server software is user-based and ranges from \$8,000 to \$118,500.

Contact Information Builders Inc., 1250 Broadway, New York, NY 10001; (212) 736-4433.

**Circle 374 on reader card**

## Holland House Adds NETPRINT Module To UNISPOOL

Holland House added a new module to the UNISPOOL multiplatform network spoolfile management system.

UNISPOOL/NETPRINT enables the

printing of spoolfiles to and from PC printers and to printers directly connected to a LAN via a LAN interface card or a print server. For PCs, UNISPOOL/NETPRINT prints spoolfiles on printers connected to your personal computer without interrupting your current PC task. For printers directly connected to your host LAN with a JetDirect or other TCP/IP-based LAN interface card, UNISPOOL/NETPRINT allows you to address these printers from any UNISPOOL/NETPRINT resident host.

UNISPOOL/NETPRINT is available for MPE V, MPE XL, HP-UX, DOMAIN, AIX, ULTRIX and SCO-UNIX hosts. Module prices start from \$1,000 on MPE systems, according to machine size, and from \$250 on UNIX systems depending on the number of users.

Contact Holland House, P.O. Box 91027, Austin, TX 78709; (512) 288-7540.

**Circle 378 on reader card**

## CY-8500 Enables Fast File Access On 25 GB 8mm Tapes

Contemporary Cybernetics Group introduced the CY-8500 8mm tape drive with a fast file access feature that allows UNIX users to access any file on a 25 GB 8mm tape in seconds.

The CY-8500 can store between 5 and 25 GB on one tape at speeds of up to 90 MB per minute. The CY-8500 features a liquid crystal display that shows command under execution, transfer rate, compression ratio, tape remaining and ECC rate on a 2-line, 40-column panel. Optional data compression allows the user to increase base storage

capacity by up to five times. Data encryption lets users control access to sensitive data through the use of encoded card keys. Rack mounting options, hard disk configurations and a variety of cable lengths provide configuration flexibility.

Two levels of Error Correction Code are implemented to ensure data integrity. The CY-8500 offer a Mean Time Between Failure rate of 60,000 hours.

Contact Contemporary Cybernetics Group, Newport News; (804) 873-9000.

**Circle 380 on reader card**

## Reporting Utility Added To MiniSoft 92

MiniSoft announced DataExpress reporting utility support with MiniSoft 92 for DOS and Windows.

DataExpress is an end-user reporting tool designed to perform extractions from HP 3000 host computers. Extracted information created by DataExpress will now automatically be downloaded through MiniSoft 92's built-in file transfer facility.

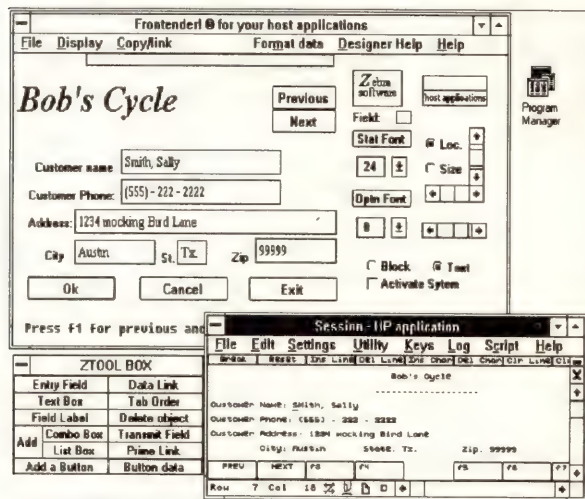
MiniSoft 92 is a terminal emulation and data communications package for IBM PCs and compatibles. Available for the DOS and Windows environments, MiniSoft 92 features extensive LAN support, a command language, and emulation of the 2392A and 700/92 CRT terminals.

MiniSoft for the DOS and Windows environments is priced at \$159.

Contact MiniSoft Inc., 13617 SR 9, Snohomish, WA 98290; (800) 682-0200.

**Circle 376 on reader card**

# At last! Windows frontends for your host applications !



**Frontender!** gives you the ability to develop Window's frontends for your host applications in a 'real-time' environment. Your frontends will be communicating with the host as soon as you add your first screen object. Creating frontends has never been this easy or possible. All screen objects can be moved, sized, colored, or the font changed. Each object can have it's own Windows 'context sensitive' help. **Frontender's!** 'Hotlink' utility allows the host to update your spreadsheets and/or documents. With **Frontender's** auto-sync function you will never be out of sync with your host.

## Special Introductory offer!

**\$129.95 save over \$200 on sug.retail.**

So call now! Zebra software **1-800-597-7735**

2108 Lewood Circle, Ausin Tx. 78745. Expires 12/10/92

**CIRCLE 483 ON READER CARD**



## eXclaim! V1.1 Offers SQL Interface To Ingres Database

Quality Software Products announced version 1.1 of eXclaim!, the X Window/Motif spreadsheet program. Version 1.1 features

an SQL connection to the Ingres Database System.

With the Ingres add-in for eXclaim! version 1.1, you can connect to Ingres databases, form SQL queries and extract

selected data directly into an eXclaim! worksheet. You can use eXclaim! as a data-entry tool for Ingres, and/or modify and update data previously extracted from a database. SQL queries can be typed directly or constructed with a few mouse clicks. You can save sessions, and queries for repeated use, independent of any particular worksheet. You can create new tables, columns and insert new data into existing databases.

Version 1.1 of eXclaim! is available on UNIX workstations running X Windows Version 11 Release 3 or later, or UNIX host computers connected to X client workstations for terminals. List price for a single-user floating license is \$695.

Contact Quality Software Products, 5711 West Slauson Ave., Ste. 240, Culver City, CA 90230; (310) 410-0303.

**Circle 400 on reader card**

## IMSL Announces FORTRAN Libraries For HP 9000/700

IMSL released Version 2.0 of the FORTRAN Libraries and the Interactive Documentation Facility for the HP 9000 Series 700 workstations.

The IMSL FORTRAN Libraries are a comprehensive resource of more than 900 FORTRAN subroutines for applications in general applied mathematics, special functions and for analyzing and presenting statistical data in scientific and business applications. The Interactive Documentation Facility provides online access to the essential printed documentation for the IMSL Libraries.

Price starts at \$5,250 for workstations and \$1,800 for PCs.

Contact IMSL, 14141 Southwest Freeway, Ste. 3000, Sugar Land, TX 77478; (713) 279-1000.

**Circle 377 on reader card**

## File Manager/3000 Provides MPE Command Front End

Software Development Resources announced release 2.0 of File Manager/3000, providing a windows-based front-end to the MPE command interpreter.

With File Manager/3000, file operations such as editing, viewing and sorting can be performed by pressing function keys. Release 2.0 contains several new features. Global Undelete enables you to immediately recover accidentally deleted files. Files deleted with the MPE Purge command are intercepted and transparently moved to a holding area for recovery purposes. In addition, disk space

Q.

**How do you tell HP and HP Apollo computing pros about your products and services?**

A.

**Rent HP Professional's mailing list to reach over 35,000 top decision-makers in HP and HP Apollo sites.**

You can target the users who are most interested in your products by customizing a list using over 200 free selects, including...

- Industry
- Company Size & Budget
- Networks/Protocols
- Purchase Authority for over 60 Product/Service Categories
- Title
- Computers Owned/Planned for Purchase
- Networking Information

***Call Jane Hope at (215) 957-4221 to rent a list or request more information.***

**HP Professional's List Delivers!**

**HP Professional**

101 Witmer Road, P.O. Box 616, Horsham, PA 19044  
(215) 957-4221 ■ FAX (215) 957-1050

3096-11/92L



management policies can be defined to automatically trim, purge, archive and compress files that have not been accessed within a specified number of days.

Contact Software Development Resources, 22032 Trailway, El Toro, CA 92630; (714) 770-7930.

**Circle 395 on reader card**

### **Develop GUI Screens With Zebra's Frontender!**

Zebra Software Development Co. announced Frontender! for Windows, a GUI development kit used for developing front ends to existing HP applications.

With Frontender!, you can develop GUI screens on the fly for your existing block and text mode applications with no changes required to the host applications. Users can also develop screens using buttons, text boxes, list boxes, drop-down combo boxes or multiline text boxes with scroll bars. A built-in synchronization scheme assures that the host and the PC are in sync and that the correct front-end is displayed for each host screen.

Frontender! requires Unison-Tymlabs' Business Session for Windows terminal emulation software to run, and uses Session's scripting language.

Contact Zebra Software Development Co., 2108 LeWood Circle, Austin, TX 78745; (512) 444-3320.

**Circle 370 on reader card**

### **O'PIN Systems Presents Reveal 2.0**

O'PIN Systems announced Reveal Version 2.0, an update of its paperless reporting software for the HP 3000, and the availability of ACSYS, its report storage and retrieval system, on the MPE XL series of HP 3000 machines.

Major enhancements to Reveal Version 2.0 include the ability to download report data to personal computers, a new "find all" string search, data compression for increased disk storage, automated tape archiving and the ability to toggle or switch back and forth between several reports. Reveal delivers information electronically and lets you locate, display and print the information you need. Its PINPOINT distribution module assures each user receives only the pages of a report they need and are authorized to see.

ACSYS, available now on MPE XL HP 3000 machines, provides long-term data storage on optical WORM disks to minimize

the use of microfiche and paper storage. WORM optical disks hold 800 MB of information, or about 250,000 pages.

Contact O'PIN Systems, 7900 International Dr., Ste. 635, Bloomington, MN 55425; (612) 854-3360.

**Circle 394 on reader card**

### **HP And Consilium Unveil WorkStream Open**

HP and Consilium Inc. announced WorkStream Open, a manufacturing execution systems (MES) software re-architected to run on HP 9000 UNIX-based computers.

Previously available only on Digital's VAX line of computers, WorkStream Open is an integrated MES solution that provides plant floor operators and managers with current views of all elements of manufacturing, including people, equipment, materials, facilities and work instructions. MES software integrates plant floor operations in real-time, providing information and control to support continuous improvement.

WorkStream Open prices start at \$60,000, depending on the number of users and configurations.

### **IEM Releases Backup, And Archive Librarian**

IEM announced its Backup and Archive Librarian, which supervises all backup and archival storage from automatically starting scheduled store operations to managing data, media, storage devices and device maintenance.

Librarian supervises an unlimited number of full backups, incremental backups and restores. Files can be included or excluded by pattern, user, group or date, repeats can be specified by hours, day, date, day of week, month or year.

The Librarian includes two user interfaces. The command line interface provides scripting capabilities as well as access from text-only terminals, allowing the experienced UNIX user to access system-level commands. The X 11/Motif interface provides pull-down menus and graphical, intuitive access to all users.

Librarian's initial release will accommodate a variety of HP 9000 workstations and file servers either stand-alone or on a TCP/IP network.

Contact IEM Inc., P.O. Box 1889, Fort Collins, CO 80522; (303) 221-3005.

**Circle 372 on reader card**

**HEWLETT-PACKARD**

**TSA**

*The Right Equipment. Right Now.*

9000

1000

**BUY**

3000

**SELL**

TEST

**RENT**

**REPAIR**

Printers  
Plotters  
Memory  
Disc Drives  
Workstations  
Data Acquisition

**TECHNICAL & SCIENTIFIC APPLICATION INCORPORATED**

2040 West Sam Houston Parkway N.  
Houston, Texas 77043  
Telephone 713 935-1500  
Fax 713 935 1555



**1 800 422 4872**

**CIRCLE 137 ON READER CARD**



# Datasys

COMPUTER CORPORATION  
BUY • SELL • LEASE • TRADE

## Hewlett-Packard

- SYSTEMS
- UPGRADES
- MEMORY
- PERIPHERALS

Call Today 800-DATASYS  
(328-2797)

Dallas Oklahoma City  
(214) 931-9195 (405) 946-0440  
FAX (214) 931-9619 FAX (405) 947-3046

CIRCLE 484 ON READER CARD

## HEWLETT-PACKARD



The Right Equipment. Right Now.

## RENTS

PLOTTERS ► PRINTERS ► CPU's ► TEST  
WORKSTATIONS ► DISC DRIVES

- Attractive Rates
- Same Day Shipments
- Long and Short Term Rentals

TECHNICAL & SCIENTIFIC APPLICATION INCORPORATED  
2040 West Sam Houston Parkway N.  
Houston, Texas 77043  
Telephone 713 685-1895  
Fax 713 935 1555

1 800 422 4872

CIRCLE 138 ON READER CARD

## The HyPoint Advantage . . . INVENTORY

"Specializing in Full  
Line of  
HP 3000 Products"

Buy ■ Sell ■ Trade ■ Lease

HyPoint Technology  
600 Ken Mar Drive  
Cleveland, OH 44147

1-800-231-5500

216-526-0323

CIRCLE 217 ON READER CARD

## HEWLETT-PACKARD 9000 IT'S OUR SPECIALTY.

PRINTERS PLOTTERS  
LaserJets DraftPros  
DeskJets DraftMasters  
Rugged Writers Electrostatics

### WORKSTATIONS

Series 80, 200, 300, 400

We offer large discounts, outstanding service and immediate delivery. Call us before you buy a printer or plotter!



TED DASHER  
& ASSOCIATES

4117 2nd Avenue South  
Birmingham, AL 35222

(205) 591-4747 or (800)638-4833  
Fax: (205)591-1108

CIRCLE 233 ON READER CARD

## HP 9000 MODEL 360 TurboSRX

- 8-12 MB RAM / 81MB HD / VME
- 98730A 3-D display controller
- 32-bit display controller interface

\$7,200 - \$9,200

SYMBOLICS Workstations  
19" RGB Hi-Res Monitors  
Summa MGII 3648 w/ BASE  
APOLLO 3500/4000  
HP 9826/9836S -- \$750/\$1995  
HP IEEE-488 cables -- \$25/\$35

Buy • Sell • Rent • Lease

• E P T S •

Glendale, CA 91201

Tel:(818) 954-9730 □ Fax:(818) 840-0280

CIRCLE 496 ON READER CARD

## ELECTRONIC SERVICES, INC.

FAX 509-662-8271

### COMMERCIAL DIVISION

BUY • SELL • TRADE

HP 1000 • 3000 • 9000

509-662-9039

### MILITARY DIVISION

Specializing in US Government  
Military and related Customers.

We maintain a large inventory of Systems  
Peripherals and Parts to support  
the HP 9020A/9020C Computers

509-662-6229

Since 1973

CIRCLE 212 ON READER CARD

## HEWLETT-PACKARD

1000 • 3000 • 9000

BUY \* SELL \* RENT \* LEASE

MAINTENANCE

PROCESSORS • PERIPHERALS • SYSTEMS

## EURODATA INC.

(613) 745-0921

Fax: (613) 745-1172

2574 Sheffield Road, Ottawa, Canada K1B 3V7

CIRCLE 283 ON READER CARD

## SHERLOCK

### Systems & Solutions

Sensible Solutions To The Mysteries  
Of Your Hardware Requirements

Solutions . . . Not Just Answers

We inventory a large line  
of CPU's and peripherals.

MPE • MPE-XL • UNIX

Buy • Sell • Trade • Lease



CALL

1-800-827-6804

FAX

216-848-4515

CIRCLE 491 ON READER CARD

## HP-1000

BUY • SELL • TRADE • RENT

Hewlett-Packard  
Computer Equipment

Complete product line  
including Systems, Memory,  
Discs, and Tapes.



HERSTAL

AUTOMATION LTD.  
3171 West Twelve Mile Road  
Berkley, Michigan, USA 48072  
Telex 650-321-1560  
FAX 313-548-2010  
Phone 313-548-2001

CIRCLE 216 ON READER CARD

HP PROFESSIONAL





**I/O Data Systems, Inc.**  
3000/9000/1000  
**HP**  
BUY/SELL/TRADE  
(216) 835-2211  
27378 W. Oviatt  
Bay Village, OH 44140  
FAX (216) 835-0220

CIRCLE 272 ON READER CARD

**HP 9000 PRICE SPECIALS!**  
**800-877-7339**  
SERIES 300, 400, 600, 700, & 800  
UPGRADES PERIPHERALS  
PLOTTERS PRINTERS  
**SYSTEM WAREHOUSE**  
HAS HARDWARE, SOFTWARE, AND NETWORK SOLUTIONS FOR LESS!  
HEWLETT PACKARD AUTHORIZED RESELLER

CIRCLE 251 ON READER CARD

**25 YEARS**  
1968-1993  
HP Hardware, Repair, Maintenance and Disaster Recovery Services.  
**Computer Solutions, Inc.**  
**201-672-6000**

CIRCLE 209 ON READER CARD

**TUNE INTO HP**  
Pre-owned Equipment  
3000 Peripherals 9000  
BUY SELL TRADE  
WORKSTATIONS  
CPUs  
DISC & TAPE DRIVES  
TERMINALS & PRINTERS  
3000/9000 MEMORY  
**Lynne Company**  
(Calif) 805-489-1564  
(Outside Calif) 1-800-338-5019  
(Fax) 805-481-3799

CIRCLE 219 ON READER CARD

**WE FIX H-P**  
• Expert Depot Repair •  
• 5-day Turnaround •  
• Buy and Sell •  
H-P 1000/3000/9000  
• LaserJet Repair •  
**CRISIS**  
**800-729-0729**  
We accept VISA, AMEX and MasterCard  
408•270•1100 - San José, California  
408•270•1183 FAX

CIRCLE 211 ON READER CARD

**NORCO COMPUTER SYSTEMS, INC.**  
Hewlett-Packard Quality at a NorCo Price  
**1000 • 3000 • 9000 • 250**  
**BUY — SELL**  
**TRADE — LEASE**  
Processors, Peripherals and Systems  
21337 Drake Road  
Cleveland, OH 44136-6620  
FAX: 216-572-0636  
216-572-4040 1-800-892-1920  
(Outside Ohio)

CIRCLE 221 ON READER CARD

Established 1978  
HP Remarketing Specialists  
**1000 — 1000 — 1000**  
BUY SELL TRADE  
**Monterey Bay COMMUNICATIONS**  
Phone: 408-429-6144  
Fax: 408-429-1918

CIRCLE 229 ON READER CARD

**AMTEK**  
**YOUR HP CONNECTION**  
• BUY • SELL • SERVICE •  
**1-800-765-0331**  
Los Angeles • Washington D.C. • Tampa

CIRCLE 206 ON READER CARD

**QUALITY HP EQUIPMENT WITHOUT THE HP PRICE**  
DON'T UPGRADE YOUR HP SYSTEM UNTIL YOU GET A SECOND OPINION FROM THE SECOND SOURCE FOR HEWLETT-PACKARD 1000-3000-9000 EQUIPMENT  
Consult with us about cost-saving alternatives  
• Complete Configurations  
• Individual CPUs-Peripherals  
• Memory Upgrades and Feature Enhancements  
• Classic and Spectrum Equipment  
**WE BUY**  
Highest Prices Paid  
**WE SELL**  
\*All Items Sold Are Guaranteed for HP Maintenance  
\*Short and Long Term Leases Available  
**WE TRADE**  
Over 1000 satisfied Hewlett-Packard users are our customer references throughout the United States, Canada, Europe, and the Far East  
**C.S.U. Industries, Inc.**  
135 Rockaway Turnpike, Lawrence, NY 11559  
Ask for Mordt: (516) 239-4310 FAX (516) 239-8374

CIRCLE 205 ON READER CARD



**BUY • SELL • TRADE**

**COMPLETE HP SYSTEMS AVAILABLE**

**ALL PERIPHERALS**

*All items in stock – immediate delivery  
All warranted to qualify for  
manufacturer's maintenance.*

**ConAm Corporation**

Canada/US 800-926-6264  
California 310-419-2200  
FAX 310-419-2275

**RENT • LEASE • MAINTENANCE**

CIRCLE 210 ON READER CARD

**HEWLETT PACKARD**

Extensive inventory of all  
types of HP computer  
equipment. Expert  
configuration assistance.

- HP-3000 - Vectra - Printers
- HP-9000 - Series 80 - Disk Drives
- HP-150 - Plotters - Tape Drives
- HP-110 - Lasers - Monitors

**Cal-Logic**

18707 Parthenia St. #3  
Northridge, CA 91324  
(818) 701-9005  
fax (818) 701-5572

CIRCLE 124 ON READER CARD

**HP 3000**

**Buy — Sell — Trade  
Hewlett Packard Equipment**

**CALL**

**713-690-1100  
(Fax) 713-690-1130**

**Surety  
Systems**

8600 Jameel Road, Suite 120  
Houston, TX 77040

CIRCLE 226 ON READER CARD

CAREERS

**HARBORSIDE**

Buy/Sell/Lease  
All Hewlett Packard  
1000/3000/9000  
Printers/Plotters  
Memory Etc.

*Please call for Pricing*

**813-799-2009  
Fax 813-791-6699**



HARBORSIDE  
MARKETING INC.  
2519 McMullen Booth Rd.  
Suite #510  
Clearwater, FL 34621

CIRCLE 215 ON READER CARD

**CONSULTING  
OPPORTUNITIES**

**HP3000**

Consulting Positions Nationwide

**IMMEDIATE NEED**

**\*\* TEXAS \*\***

Permanent positions also exist for  
full-time staff in our other locations.

Attn: Jerry Sears  
**SE Technologies, Inc.**  
15 Bank Street  
Stamford, CT 06901  
Phone: (203) 357-1772  
Fax: (203) 964-8223

CIRCLE 260 ON READER CARD

**HP CAREERS NATIONWIDE**

Put your valuable career or job opening in  
the hands of the experienced HP recruiter  
who is heavily involved in YOUR industry!!!

- Professional Recruiter since 1975
- Certified Personnel Consultant (CPC)
- Author of "Peopleware" articles
- Speaker at INTEREX, ICMS and HP RUGS
- RUG Council Member and ACSC Rep
- Nationwide database of over 10,000 HP contacts
- Networked nationally for all geographic locations

**Call - Amos & Associates**



**Diane Amos, C.P.C.**

633-B Chapel Hill Road  
Burlington, N.C. 27215  
(919)-222-0231  
Fax: (919)-222-1214

CIRCLE 204 ON READER CARD

**INFORMATION**

**Rates:** 1 time: \$500  
3 times: \$450  
6 times: \$400  
12 times: \$350

**COLOR NOW AVAILABLE—\$100**

**Size:** 1/9 page — 2 3/16" x 2 3/4"

Typesetting and composition  
available.

Camera ready mechanical required.

**For more information call:**

Jane Hope  
(215)957-4221

AGS, a NYNEX Company, is a leader in the  
design and implementation of applications  
and systems software. We employ over 2500  
computer professionals in 50 offices in the  
US, Canada and England.

We have career opportunities for consultants  
with experience developing software  
with the following:

- HP3000, FORTRAN, IMAGE,  
POWERHOUSE, KSAM
- ORACLE, VAX, UNIX, C

To find out why our consultants consider  
AGS a world-class employer, call or send  
your resume to:

**Scott Burghardt**  
Sr. Technical Resources Manager  
AGS Information Services  
3301 Country Club Road, Suite 2208  
Endwell, NY 13760  
Phone: (607) 748-5550  
Fax: (607) 748-1133

CIRCLE 291 ON READER CARD

**THE Blethen  
GROUP**



**WENDY W. LINDSAY**  
Division Manager  
Hewlett-Packard Services

A FULL SERVICE ORGANIZATION DESIGNED  
FOR STAFFING PARTNERSHIPS  
**800-677-0490**

**dP PROS**  
CONSULTANTS

**Personnel  
Placement, Inc.**  
RECRUITERS

CIRCLE 224 ON READER CARD



# HOW KELLY STEPS UP YOUR PERFORMANCE... WHETHER IT'S CPU, MEMORY, I/O OR SOFTWARE!

Kelly offers a broader line of  
HP-compatible memory,  
Ramdisc and system  
performance improvement  
products than anyone,  
for

- all HP-3000 systems
- all HP-9000/800 servers
- all Series 300/400/700 workstations
- all LaserJet and InkJet printers

## Step up to our Support Program:

- ✓ Performance consulting
- ✓ Lifetime Warranty
- ✓ Free trial period
- ✓ PICS technical support
- ✓ Same day service
- ✓ Frequent megabyte trade up
- ✓ Service call reimbursement



*New!*

OVERLORD allows you to set CPU percentages for classes of users with its "push button" control.

RAMDISC eliminates I/O bottlenecks and boosts performance by 30 to 400%.

128 MB Memory expands Series 9x7/ LX and 8x7 to 1 Gigabyte.

64 MB Memory expands Series 720/730 to 256 MB.

Write, Phone or FAX today.  
Learn more about  
how we've become  
"The Performance People".

**KELLY**  
COMPUTER SYSTEMS

139 N. Whisman Rd.  
Mt. View, CA 94043  
Tel: 415-960-1140  
FAX: 415-960-3474  
800-627-4000

Am Feld 2  
2000 Homburg 50  
Germany  
Tel: +49-40-391704  
FAX: +49-40-391703

HOTKEY

RAMDISC  
OVERLORD





**N**ow you can add workstations to your Domain/OS or HP-UX environment at only a fraction of the list price.

That's what remanufacturing is all about. Recent model, lower cost equipment that runs like new because it has been rebuilt. From the ground up. To manufacturer's specifications.

Literally manufactured a second time. By Tryonics,

**Why  
pay  
more  
?**

the people who know how to optimize these systems for your installation—new or existing.

**Tryonics** delivers the highest quality remanufactured workstations on the market today. Backed with technical expertise, full 90-day warranty and eligible for manufacturer's maintenance contract.

Before you pay more, call **1-800 551-6236**

 ***tryonics inc.***

Workstation Computers and Services

CIRCLE 477 ON READER CARD



# ADVERTISERS INDEX

Reader Service Number

Page

104	Adager .....	51
163	Aldon Computer Group .....	56
105	Bering Industries, Inc. ....	19
171	Black River Computers .....	35
108	Bradmark Technologies, Inc. ....	31
184	Bradmark Technologies, Inc. ....	I.F. COVER
102	Chestnut Data .....	64
117	Cognos, Inc. ....	1
111	Collier-Jackson .....	41
101	Computech Systems Corp. ....	45
112	Contemporary Cybernetics Group .....	13
164	Creative Systems .....	INSERT
500	Deltec .....	52
459	Disk Emulation Systems, Inc. ..	12
113	Dynamic Information Systems Corp .....	6-7
178	Emulex Corp. ....	72
119	Herstal Automation, Ltd. ....	43
173	Herstal Automation, Ltd. ....	57
199	Hewlett-Packard/Worldwide Customer Svc. ....	5
486	Hillary Software, Inc. ....	45
474	Hooleon Corporation .....	40
297	Ideal Computer Services .....	52
122	IEM, Inc. ....	2
247	Information Builders, Inc. ....	17
129	IOtech .....	69
245	ISA CO. LTD./Texas ISA, Inc. ....	4
185	Kelly Computer Systems .....	77

Reader Service Number

Page

281	Kingston Technology Corporation .....	29
463	Lawson .....	53
220	Martech .....	39
155	M.B. Foster Associates .....	67
246	Newport Digital Corporation ....	9
488	Newport Digital Corporation ..	11
258	O'Pin Systems .....	I.B. COVER
489	Oregon Digital Computer Products, Inc. ....	40
132	Penril Datacomm .....	63
479	Perwill EDI .....	39
225	Protos Software .....	15
268	Quest Software .....	22-23
153	Ross/N.E. ....	55
284	SAP America .....	25
497	Smith Dennis & Gaylord .....	27
457	Systems Enhancement Corporation .....	59
234	Telamon .....	35
477	Tryonics Inc. ....	62
137	TSA .....	73
254	Tufts Associated Health Plans ..	70
139	Unison/Tym labs .....	37
243	Unison/Tym labs .....	60-61
127	Walker Richer & Quinn, Inc. .	47
145	Walker Richer & Quinn, Inc. ....	B. COVER
180	Wesson, Taylor, Wells & Associates .....	49
483	Zebra .....	71

# ADVERTISING SALES OFFICES

Leslie Ringe, Publisher  
(617) 861-1994

## NEW ENGLAND

(617) 861-1994

Alonna Doucette, Regional Sales Manager  
238 Bedford St., Ste. 3  
Lexington, MA 02173  
FAX (617) 861-7707

## MID-ATLANTIC/EASTERN CANADA

(215) 957-1500

Mark Durrick, Eastern Regional Manager  
101 Witmer Road  
Horsham, PA 19044  
FAX (215) 957-4264

## MIDWEST & SOUTH

(215) 957-1500

Peter Senft, Regional Sales Manager  
101 Witmer Road  
Horsham, PA 19044  
FAX (215) 957-4264

## NORTHERN CALIFORNIA, NORTHWEST, WESTERN CANADA

(415) 873-3368

Judy Courtney, Regional Sales Manager  
903 Sneath Ln., Ste. 220  
San Bruno, CA 94066  
FAX (415) 873-6608

## SOUTHERN CALIFORNIA & SOUTHWEST

(818) 577-5970

Karin Altonaga, Regional Sales Manager  
1010 E. Union St., Ste. 101  
Pasadena, CA 91106  
FAX (818) 577-0073

## INTERNATIONAL

(617) 861-1994

Leslie Ringe, Regional Sales Manager  
238 Bedford St., Ste. 3  
Lexington, MA 02173  
FAX (617) 861-7707

(215) 957-1500

Cheryl Demaiorbus, Marketing Services Manager  
Lisa Hartman, Marketing Services Assistant  
Mary Browarek, Card Deck Manager  
Cathy Dodies, List Rental Manager  
Jane L. Hope, List Rental Sales

# HP Professional

## COMING IN JANUARY...

### Editorial Focus -- Commercial UNIX

#### Scheduled Features\*

- **The Fate of OSF/1** — Gordon McLachlan explores HP and other vendors' plans to incorporate features of the Open Software Foundation's much-vaunted standards-based operating system into their own "proprietary" versions of UNIX.
- **UNIX Payroll/HR Software** — Downsizing, client-server architecture and open systems have payroll and human resources software suppliers moving to HP-UX. Paula Jacobs examines the HP-UX migration plans of popular HP 3000 vendors and the arrival of IBM mainframe applications on the HP multiuser UNIX scene.
- **UNIX System Management** — X terminals, servers diskless workstations, PC X servers, who needs what and how do they all fit together? Marty Poniatowski takes an in-depth look at the issues facing UNIX system managers in commercial environments.

SPACE CLOSING: 12/4

MATERIALS DUE: 12/11

\*Articles subject to change.

HP Professional

101 Witmer Road • Horsham, PA 19044 • (215) 957-1500 FAX (215) 957-4264





**Gordon  
McLachlan**

During the past year, it seems like I've upgraded or changed every PC software package I own. I don't think my experience is unique. With the switch to Windows and significant releases of packages coming out every 18 months, a typical user with a half-dozen applications has to assimilate a new one every four months or so.

For many of us, that's not a problem. We get paid to play with the new toys, and we might even enjoy it. I know I do. The kinkier it gets, the better I like it. The trouble is, most people don't share my enthusiasm for tearing off shrinkwrap. Some people like to actually use their software instead of wasting their time learning new versions.

If you want your users to get the most out of their systems, you have to give them a fair shot at it.

- Buy user-friendly software.
- Provide documentation and training.
- Give users hands-on support.
- Control the number of packages and upgrades.

The first thing I do when I get new software is to read the installation instructions and then set up the software. Then I throw the manual away. Actually, I keep the manual, but I absolutely refuse to read it before I start mucking around. I may be over-estimating my intellectual prowess, but I figure that if I can't learn how to use a package reasonably well without the book, then your typical user won't have any luck, with or without it.

Graphical user interfaces like Windows have made software much easier to use. A good Windows application will hand you the better part of its function on a silver platter. Learning an applica-

tion well may take as much effort as ever, but at least the first step — the big one — is a lot more manageable.

### **Reading Is Fundamental**

Speaking of manuals, how do you expect users to get a handle on their programs without the documentation? The quest for cheap software has led companies to negotiate site-licenses, serve applications on LANs, and even rip the stuff off. Regardless of the method, users don't get the manuals as standard issue.



If you aren't going to distribute manuals or books, at least tell your users what books they might find useful, and where they can buy some. Having ignorant users may make you feel smarter, but it'll make the support folks work harder.

Training is also important, and it should be a continuing process for all users. Maintaining a good training program is hard to do; when budgets are tight, training budgets are a tempting target. Coordinating a training program is an administrative pain in the butt, and it is not what you might call a technological challenge.

The key is the continuing process. Many people are trained when they first get PCs or software, but they only get the go-around once. When upgrades show up, we assume the users will pick up on the new features by themselves. What often happens, though, is that users ignore the new features and use the new version just like the old. Ignoring superfluous new chrome won't hurt, but vendors do put some good stuff in there, too.

User support means more than pick-

ing up the fragments after something blows up. Users always require some hand-holding, whether to pick up some tips, clean up a mess, or just to know you care.

Despite their supposed cost efficiencies, I'm dubious about the worth of the large, centralized help desks in vogue at big companies. For one thing, they're impersonal. For another, the support people are sometimes too far removed from the users to know how they really use their systems. If you don't know the financial analysis techniques they use, you can't support some spreadsheet hotshots, no matter how well you know the menu commands and the macro-language.

### **Mingle With The Masses**

If you don't give users the personal touch, they'll develop their own, probably in an informal support structure within their own departments. Having users support users can work decently, but don't delude yourself into thinking that you're saving the company tons of money by hiding your tech support behind a bank of phones. Sticking some formal support out among the users may be cheaper than the cost you're paying in lost user productivity for the informal support network.

The final thing you can do is to limit the proliferation of different software packages. Setting standards is one way to cut down the field. Another is to determine what your users' real needs are before recommending another application. Does that user really need a new graphics or statistical analysis package, or will your standard, outlandishly over-featured spreadsheet do the job? Do you need a page-layout program for a newsletter or manual, or can that fancy Windows word processor fill the breach? ■





## NEW REVEAL™ 3.2 SAVES REAMS OF PAPER AND A PILE OF MONEY.

Now you can gain greater cost efficiencies without sacrificing "competitive muscle." Because new REVEAL lets you instantly view and use reports on line. No more wasted time, no more wasted paper!

With its rich feature set, REVEAL has fast become the leading electronic reporting software for HP 3000 offices.

Offering an amazing number of ways to get the right information to the right people—right now.

Users zero in on the exact information they need, then download to PC applications or print just the pages needed. So you can cut paper instead of people.

For prudent Presidents, cost conscious Controllers, money-

minded MIS Directors and beleaguered "Bean Counters," REVEAL is the time and cost saving tool of choice.

To start smiling right away, phone O'PIN SYSTEMS for complete details at 1-800-888-1804.



International Plaza, Suite 635  
7900 International Drive  
Bloomington, MN 55425, U.S.A.  
PHONE: 1-800-888-1804 FAX: 612-854-3072

Australia, Facer Information Design, 61-2-484-3979 • Finland, Multicom Software, 358-53-257400 • France, Proactive Systems, 33-1-49-01-05-00 • Germany, AK-Industrieinformatik, 49-9-31-274661 • Holland, Samco Automation, 31-4242-15655 • United Kingdom, CPL Systems, Ltd., 44-742-620242





# Reflection. The only way to go!

## New! Reflection® for DOS

Precise HP terminal emulation—version 4.2

- DOS 5.0 support—Task Swapper aware
- Lower memory requirements
- Ten-number modem dialer

## New! Reflection for Windows

True MS-Windows based HP terminal emulation—version 4.0

- Button palettes—40 user-definable keys with icons
- Script recorder—automatic script file creation
- Drag-and-drop file transfer

## New! Reflection Network Series®

Concurrent connections to multiple hosts and LANs—version 2.0

- Token-Ring and NetBIOS support
- Lower memory requirements
- Smooth multi-session management for DOS and Windows
- NS/VT and Telnet Connections for the Macintosh

**Call 1-800-92NETWORK**

Connectivity options for HP 3000, UNIX,  
VAX/VMS, IBM and multivendor environments



**REFLECTION**  
SERIES  
**SOFTWARE**

CIRCLE 127 ON READER CARD

**Walker Richer & Quinn, Inc.**